

ROOSEVELT'S ARRIVAL, AT KAPITI PLAINS, A STATION NEAR THE ESTATE OF
SIR ALFRED PEASE.

ROOSEVELT IN AFRICA

GRAPHIC ACCOUNT OF THE WORLD'S MOST RENOWNED
HUNTER IN THE WILDS OF AFRICA. HIS UNERRING
AIM AND WONDERFUL ABILITY AS A HUNTER.
ENCOUNTERS WITH LIONS, TIGERS, ELEPHANTS
AND OTHER WILD BEASTS OF THE JUNGLE.

CONTAINING ALSO A COMPLETE HISTORY AND STUDY OF
WILD ANIMALS of the **WORLD**
THEIR APPEARANCE, HABITS, TRAITS OF CHARACTER AND
EVERY DETAIL OF THEIR WILD LIFE

WITH THRILLING AND EXCITING
EXPERIENCES OF
HUNTERS OF BIG GAME
IN ALL PARTS OF THE GLOBE; INCLUDING MORTAL COM-
BATS BETWEEN FEROCIOUS WILD ANIMALS,
DANGEROUS AND DARING EXPLOITS,
AND HAIR-BREADTH ESCAPES

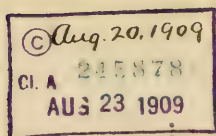
By **FREDERICK SEYMOUR**
The world-renowned Hunter and Naturalist

OVER 300 HALF-TONE ILLUSTRATIONS
MADE ESPECIALLY FOR THIS VOLUME, MANY OF THEM FROM
ACTUAL PHOTOGRAPHS OF WILD ANIMALS IN THEIR
NATIVE HOMES, TAKEN BY THE AUTHOR

Copyright 1901, by Henry Neil

Copyright
1909

By D. B. McCurdy



AUTHOR'S PREFACE.

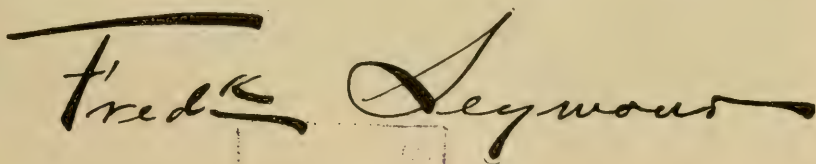
THE Roosevelt hunting expedition, which gives the special title to this work, is herewith described because its chief figure is not only an ex-President of the United States, but an American authority on wild animals who, in his ambition to become a world authority, thus ventured into some of the most famous hunting grounds of Africa. Another reason why unusual prominence is given to it, is that it is one of the most noteworthy expeditions ever organized to hunt big game and make scientific investigations among the animals of perhaps the most important zoological division of the earth.

From my earliest boyhood, wild animal life has had a fascination for me. I have been nearly over the globe and in most of the countries where wild animals have been least disturbed by civilization.


I have carefully studied each wild animal with a view to becoming acquainted not only with its physical appearance, but with its habits and manner of living, with all the traits of its character and every detail of its private life.

In describing the animals I have tried to avoid the use of all scientific words and terms so as not to confuse those readers who have made no special study of zoology.

My experiences have taught me the truth of the Scriptural saying that "man and the animals are kin," and I hope and believe that I am doing a benefit to my fellow man, as well as giving him genuine enjoyment and pleasure, by bringing him into a closer acquaintance with God's animal kingdom.



Fredk. Seymour





Copyright 1909, by Underwood & Underwood.

vi

NATIVE HUNTERS' CAMP IN THE JUNGLE.



TABLE OF CONTENTS.

THE ROOSEVELT HUNT.

Why He Went to Africa.	Hunting big game as a young man—His first book, "Hunting Trips of a Ranchman"—Universally known as hunter among sportsmen of the world—White House interviews with hunters of big game—Decision for African trip made two years before close of presidential term.....
Voyage to Mombasa.	Members of hunting party—Incidents of the voyage—Stops at Naples and Messina—Meets King Victor Emmanuel—Arrival and enthusiastic reception at Mombasa.....
Hunting Preparations and Outfit.	Hunter's license—Refuses special privileges—Employing native helpers—Wages paid, supplies furnished, fresh meat required daily
Bravest Native Hunters of Africa.	Command highest pay—No fear of death—Great fidelity to employers when peril threatens—Terrible fight with wounded lion....
The True African Sportsman.	Hazard of limb and life—Violent charges of lion, buffalo, elephant and rhinoceros—Hunter's intense scorn for cowardice.....
Scope of the Roosevelt Hunting Grounds.	Embraces every variety of country—plain, jungle, swamp, forest, and hill—Swarms with game—Over fifty varieties, not excelled anywhere in the world—The hunter's paradise—Magnificent ranches and private hunting grounds.....
Awful Cost of the Uganda Railroad.	Great cost in money, and greater cost in human lives—Awful toll collected by disease, poisonous insects, reptiles, carnivorous beasts, warlike natives, the tsetse fly that causes the fatal sleeping sickness, and the man-eating lion
Special Object of the Expedition.	Aim to collect natural history specimens for Smithsonian Institution.....
Roosevelt's Guns and Ammunition.	Preparations for bagging big and small game.
Off on the Roosevelt Safari.	The busy two days spent at Mombasa prior to departure for the hunting grounds.....

MOMBASA TO NAIROBI.

Old Mombasa, or the Battle City.	Picturesque jungle of old and new Africa—Its history—Captured and recaptured alternately by Portuguese and Arabs until protected by Great Britain.....
New Mombasa, the British Capital.	Net-work of tramways—Coolies and aristocratic Europeans—Hearty welcome for visitors—Harbor at Kilindini, two miles southeast
Climbing the Desert of Taru to Voi.	The Uganda railroad—Nairobi—Large depots and docks at Kilindini—Great Iron Bridge—Cocoanut palms and mangroves, well kept plantations, and native huts.....

- Taru Desert and Old Caravan Route.** Old road viewed from Roosevelt's speeding train—A desert, but not destitute of animal life.....
- Glorious Mount Kilimanjaro.** Highest peak in Africa, 19,200 above sea—Government road—Bungalow for tourists—Climbing the mountain from a heat of 110°, to snow and glaciers at the top.....
- How the Game is Killed in Reserves.** Safe from human hunters, but a slaughter pen for small and peaceable game by big and ferocious animals—Antelopes, zebras, ostriches and giraffes swarm here, but great numbers are required to satisfy the bloodthirsty appetites of lions, leopards, hyenas and jackals.....
- The Run from Voi to Kapiti Plains.** Great hunt started April 22nd on Ranch of Sir Alfred Pease on the Athi River—Guard of honor at station—Personnel of the party—His camp in the Mau Hills—First lion hunt—Roosevelt's joy over his first killing—Kermit a good second—Animals killed by the party in this region—Kermit and his camera also effective—Off for the Juja Ranch of W. N. McMillan, east of Nairobi.....
- Country from Kapiti Plains to Nairobi.** Up toward the great hunting grounds near headwaters of the Athi River—The spill-over of game from the reserves.....
- Nairobi, Chicago of East Africa.** Headquarters of the Uganda Railroad—Shops, iron works and native workers, also military and political headquarters—Telegraph and telephone center—Automobiles and good hotels—Electric lights glitter in the eyes of wild lions and jackals—A hospitable city to African travelers.....

ROOSEVELT HUNTING GROUNDS.

- Nairobi, the Great Outfitting Point.** Hunting expeditions or caravan parties arrive and depart daily—Porters loaded with trophies of the chase—European and Hindu merchants
- Hospitable Planters of the Hunter's Paradise.** Great estates—Juja farm, 20,000 acres—E. W. Jackson, Sir Alfred Pease, William N. McMillan royal entertainers—Roosevelt pleased with their kindness and help.....
- Beauties of the Mount Kenia Region, Eastern Limits of the Hunt.** Gorgeous colors in blossoms, groves of wild olives—Granite spires swarming with little gray monkeys—Safe from the wild beasts—Glorious cloud effects—A land of surprises—Chosen home of the rhinoceros—The shy and pretty *Colobus* monkey
- Tracking, Attacking and Killing the Big Game.** Distinguishing the spoor, or tracks, of lion, elephant, buffalo, rhino, hippo and antelope.....
- Tracking Big Game by Their Droppings and Browsings.** These, with the story of the spoor, lead the hunter to his quarry—Different signs on trees and shrubbery left by the elephant, rhinoceros, buffalo and antelope.....
- Charms of the Lion Chase.** Human wit against animal instinct—Usually minds his own business unless attacked, but most wise and uncertain of big beasts—Comparative advantages of riding the lion, or hunting him afoot—His whirlwind rush pronounced by hunters the "swiftest thing on earth".....
- Blind Charge of the Black Rhinoceros.** Does not wait to be attacked—Tears through whole caravans—Almost blind, but among the first to scent "tainted air"—Loves to lurk in dark places.....
- Terrific Onslaught of the Buffalo.** The hereditary foe of the lion—Knows he is favored meat for the king of beasts—One of the most tenacious of life among the beasts..
- Sable Antelope.** The great dog killer—Also sometimes drives his spear-like horns through the hunter's body.....
- Hartbeests and Gnus.** Their wonderful staying qualities—No horse can compare with them—Shot through the lungs, they still gallop out of sight—White bearded wildebeest—Jackson's hartbeest—Coke's hartbeest and other varieties common to the Roosevelt hunting grounds.....

NEW AFRICA.

- In Black and White.** Scattering villages of Wanytka—Generally agricultural, but sometimes dangerous—Murder of Thomas London and execution of natives.....
- Wakamba, Largest Tribe of East Africa.** Farmers and herdsmen and only tribe to hold their own against the warlike Masai.....
- The Warlike Masai.** Prowess as lion hunters—Dance in honor of a young man who killed a lion armed only with a spear—Gamblers, like other black men.....
- The Kikuyu.** An unreliable tribe between Nairobi and Mount Kenia.....
- Naked Tribes at the Head of Victoria Nyanza.** Bronze Models of physical perfection—Moral and peaceable people.....
- The Nandi Tribe.** Stole telegraph wire for bracelets and earrings and railroad bolts for spear heads.....
- Native Kingdom of Uganda.** A well organized state under the protection of Great Britain—The Japanese of Africa and their king—A land of cotton, cocoa, coffee, oranges, lemons, pineapples and general fertility—People eager for knowledge...
- White Belt.** British, Germans, Americans and Boers—From Nairobi to Port Florence a region of farms and plantations—Nakuru, the chief Boer colony—Old-time foes peaceful farmers
- Great Scenic Section of the Uganda Railway.** Rises over two thousand feet the first twenty-four miles
- Escarpment Station Overlooking Great Rift Valley, 1,500 Feet Below.** A railroad pitching over a cliff—Valley of volcanic hills and craters—A country of escarpments, or abrupt land pitches—A slumbering volcano—Old rope lift for travelers to this weird region.....
- On to Kijabe, Well Named "The Wind."** A bleak station—Ride of the Roosevelt party on the cow catcher from Kikuyu—Shoot Colobus monkeys near Kijabe—Roosevelt visits the African Inland Mission.....
- Lovely and Mysterious Lake Naivasha Beyond.** Bright blossoms on its bosom—In its midst an almost submerged crater—The home of myriad of water fowl—Surrounded by big game and great herds of sheep and goats—Its islands great breeding grounds for herons.....
- Government Breeding Farm for Zebras Near Lake Naivasha.** Efforts to solve the horse problem in Africa by producing a zebra hybrid.....
- Nakuru and Its Charming Lake.** A rich grass country surrounding a salt lake—Along the Mau escarpment and over twenty-seven huge viaducts built by American engineers—A country of Boer farmers.....
- From Fort Ternan to Port Florence.** Last section of Uganda Railroad through a swampy but fertile country.....
- The Approach to Port Florence and Lake Victoria Nyanza Disappointing.** Port Florence, a transfer station from railroad to steamer.....
- Big Hunting Grounds to the North.** Along the Nzoia River and around the southern base of Mount Elgon—A famous lion country—Riding down His Kingship—Herds of giraffe and Jackson's hartbeest—Following a lion into cover.....
- Across the Lake to Entebbe.** British capital of the Uganda Protectorate—A carefully planned city—Charming location and surroundings of "The Chair"—Shores blazing with color—Island gems in the blue lake.....
- The Sleeping Sickness.** Beautiful district densely populated by natives eight years ago now devastated—Laboratory and hospital at Entebbe—Treatment of the disease—Its inoculator, the tsetse fly—Its symptoms and mortality—Koch's investigations
- Roosevelt's Host and Hostess at Entebbe.** Judge George F. M. Ennis, head of the judicial system of the Uganda Protectorate, and his wife (née Miss Ethel Kirkland of Chicago)—Formal reception by Sir Hesketh Bell, the governor—Home entertaining by Mrs. Ennis, Entebbe's only American—Roosevelt's God-speed toward the Nile and civilization.....

ANIMALS DESCRIBED.

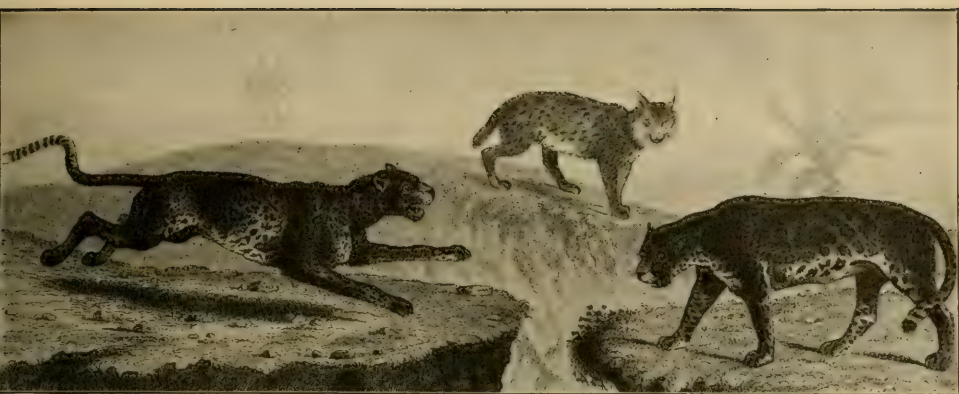
The Lion. The king of wild beasts.....	63
The Elk. Fierce fighter and great swimmer.....	81
The Tiger. The man-eater of the jungle.....	89
The Deer. In many varieties.....	101
The Mountain Lion. A savage enemy to horses and sheep.....	117
The Camel. The "Ship of the Desert"—The carrier for Asia and Africa.....	121
The Jaguar. The terror of South American villagers.....	129
The Buffalo. Only three herds left in the United States.....	133
The Armadillo. A South American animal protected like a battleship.....	145
The Lynx. With beautiful and valuable fur.....	149
The Elephant. The most marvelous animal of brute creation.....	153
The Leopard. Spotted, climbing, springing, cat-like.....	165
The Reindeer. An animal that forms the wealth of Laplanders.....	171
The Coyote. Known as the "Vagrant of the Plains".....	175
The Wild Sheep, which was hunted by President Roosevelt.....	179
The Mongoose. "Rough and Ready" fighter of the animal world.....	185
The Zebra. The beautiful horse-tiger of Eastern Africa.....	191
The Yak. Long-haired, ox-like animal on the high plateaus of Thibet.....	195
The Prairie Dog. Animals that live in underground towns.....	199
The Wild Boar, that furnishes exciting and dangerous sport for hunters.....	205
The Porcupine. A fearless animal bristling with long spines.....	211
The Hippopotamus. The great "river horse" that looks more like a river hog.....	215
The Jackal. The animal from which the dog descended.....	219
The Tapir. The connecting link between the elephant and the hog.....	223
The Monkey. The animal that most nearly resembles a human being.....	229
The Antelope. Seventy different varieties scattered throughout the world.....	251
The Rhinoceros. Huge animal that is favorite game of hunters.....	271
The Musk-Ox. A shaggy buffalo-like animal of the Arctic regions.....	279
The Giraffe. The most curious of all four-footed animals.....	283
The Fox. Cunning animal that furnishes sport for huntsmen.....	287
The Seal. Furnishes fashionable women with fur coats.....	293
The Squirrel. A frisky animal supposed to be timid, but impudent.....	303
The Otter. A little fur-bearing, land and water animal.....	307
The Civet. An animal that supplies a fine perfumery.....	311
The Crocodile. In the new world known as the alligator.....	315
The Sloth. Clings to branches of trees with back toward the ground.....	323
The Tortoise. A counterpart of the turtle of monstrous size.....	327
The Ocelot. A little forest animal with a savage disposition.....	333
The Wolf. Boldly attacks travelers—Kills sheep for fun.....	337
The Badger. An animal for which a great state is named.....	341
The Hyena. The most cowardly, cruel and treacherous of all beasts.....	346
The Llama. A link between the sheep and camels.....	349
The Carpincho. Related to the cavies but known as the "water hog".....	353
The Ant-eater. An animal that gathers ants on its long sticky tongue.....	355
The Ostrich. Chiefly valuable for its plumage.....	360
The Lizard. Many harmless, but some deadly poisonous.....	365

The Kangaroo. An animal that carries its young in a pouch.....	371
The Hedgehog. A strange little animal dressed in spikes.....	375
The Wild Goat. A wary animal that frequents high mountains.....	379
The Musquash. Little animal with habits similar to the beaver.....	383
The Wart Hog. An ugly and sometimes dangerous animal of East Africa.....	385
The Raccoon. A fur-bearing animal that washes its food before eating it.....	387
The Cobego. A queer flying animal of the Philippine Islands.....	391
The Gazelle. The embodiment of grace and beauty.....	393
The Chameleon. Supposed to live upon air, but exists upon insects.....	399
The Fossa. Species of the cat family—Fierce disposition.....	402
The Walrus. An enormous sea animal—Valuable for its oil and tusks.....	405
The Weazel. A bloodthirsty little animal with the courage of a giant.....	411
The Chamois. The animal that leaps among the mountain crags.....	417
The Rabbit. Leads a life of peril and hairbreadth escapes.....	423
The Aard Wolf. Related to the hyena and the fox.....	429
The Mole. The most marvelous of all burrowing animals.....	431
The Teurec. An insect-eating animal—Can whip a dog.....	437
The Opossum. Considered a great delicacy by the colored folks.....	439
The Duckbill. A queer animal with a duck's bill for a muzzle.....	445
The Caffre Cat. The animal from which the domestic cat has descended.....	449
The Ferret. A wonderful rat catcher and rabbit hunter.....	451
The Gorilla. The enormous ape of Western Africa.....	455
The Pangolin. A queer animal—Lives on ants—How hunted—Its habits.....	459
The Shrew. An elegant little creature that lives on insects.....	461
The Lemur. An animal closely related to the monkey.....	465
The Peccary. Ferocious little swine—Fearless in the face of danger.....	473
The Cavies. Many varieties—The guinea pig most familiar.....	477
The Aard-Vark. Known as the "earth-pig"—Ugly and ungraceful.....	483
The Wapi. A strange combination of horse, giraffe and zebra.....	487
The Aye Aye. A squirrel-like animal—Savage in its wild state—Nests in trees.....	491
The Linsang. A civet-like animal, beautifully colored—Fur is thick and velvety.....	497
The Dugong. A marine animal which somewhat resembles the manati.....	503
The Manati. A water animal sometimes known as a sea cow.....	505
The Echidna. A spiny ant-eating animal—Lays eggs and has a bird-like form.....	509
The Birds. A description of the bird illustrations comprised in the chapter headings—A complete guide to the bird kingdom and a practical handbook of ornithology.....	513-544



A WOUNDED STAG TURNING ON THE HUNTER.

At times when shot and lying as though dead, the animal suddenly starts to his feet and attacks with great ferocity.



THE ROOSEVELT HUNT.

WHY HE WENT TO EAST AFRICA.

Outdoor life and physical adventure have always seemed as natural and necessary to Theodore Roosevelt as political enterprise and manly public service. It is not on record that he has ever been fond of hunting small game, either in the Rocky Mountains or more settled sections of the United States. The bracing air of the American wilds, the free sweep of the western mountains and plains, and the excitements of running down the grizzly, have been the means of collecting and maintaining that wonderful vitality which has so completely sustained him amid the burdens and perplexities of his public career. It has made him brave in war and fearless in attacking those whom he considered foes to the nation and society.

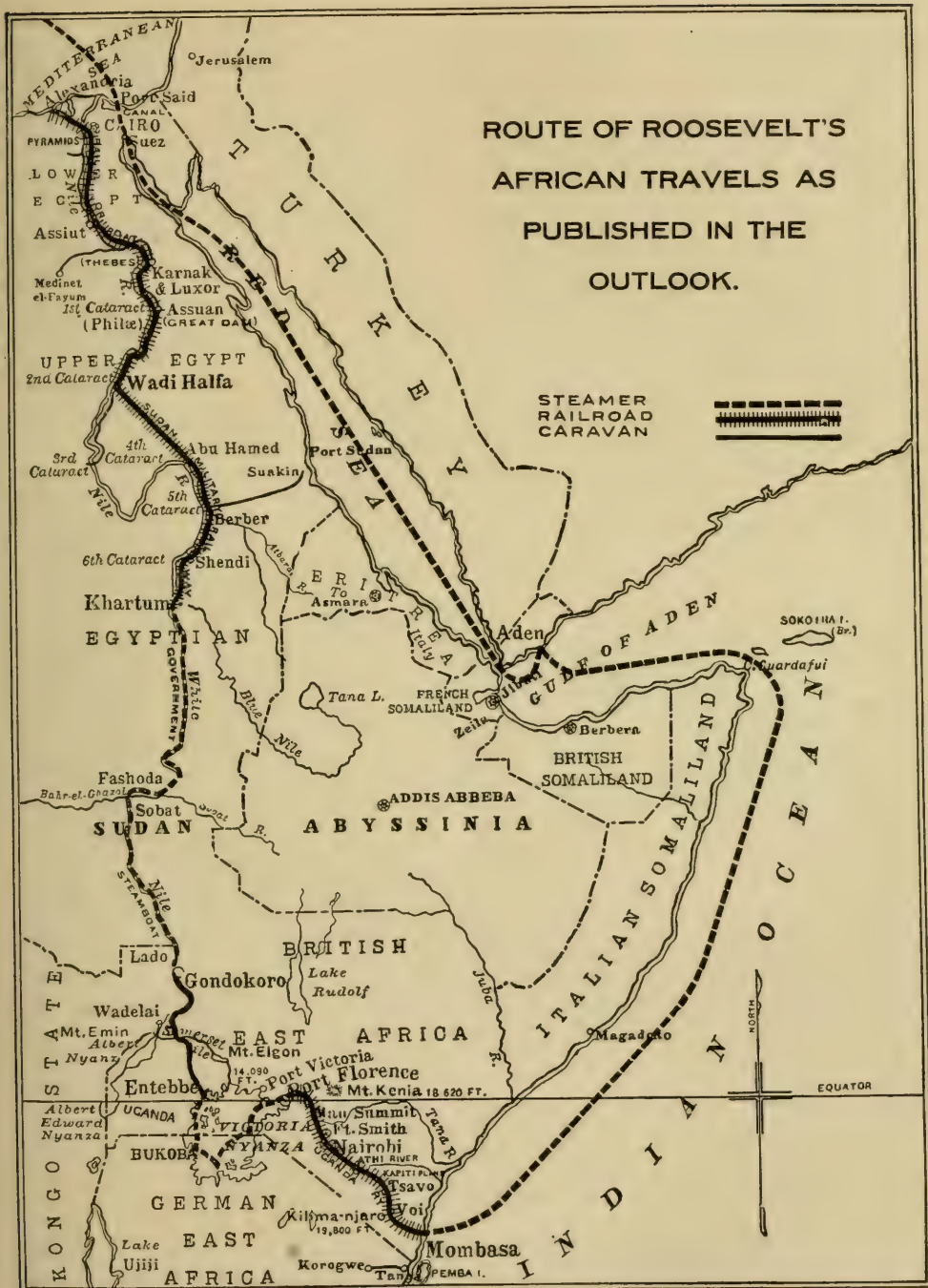
But why did he go to Africa? Could he not have continued to hunt big game at home? It was impossible for a man of his temperament to do otherwise than start for Africa. He knew all about the big game of the United States. He commenced to hunt it, as a young man on a North Dakota ranch, continuing that phase of his career over the western plains and mountains after he was President of the United States. As a young man, he wrote his first book, "Hunting Trips of a Ranchman," and has published four or five others, covering broader ground with the extension of his experience. What more natural than that, having exhausted the American subject, he should turn to the most famous hunting grounds for big game in the world? It is also quite conceivable that he wished to cut loose from the strenuous public life he had been experiencing for several years. There is, further, a special

reason for his determination to experience the most electric thrills known to hunters; by pitting his keenness, ingenuity and stamina against the same traits characteristic of the lords of the brute creation. Roosevelt as a huntsman was universally known and greatly admired among the true sportsmen of the world, and whenever one of this class came to the United States he seldom failed to have an interview with the President, and whatever the pressure of the affairs of state Roosevelt snatched time to interview the hunter of big beasts. Among these was Richard Tjader, whose exciting tales of his elephant killings, lion trackings and ridings, buffalo hunts and other adventures in British East Africa, are said to have caused Roosevelt's final decision, so that his trip was practically determined about two years before the expiration of his presidential service.

HIS VOYAGE TO MOMBASA.

On March 23, 1909, two weeks after President Taft had been inaugurated as his successor, Mr. Roosevelt left New York on the steamship "Hamburg" for a fifteen months' recreation trip, including a hunt in the protectorate of British East Africa, a voyage in the waters of the great Victoria Nyanza lake and a journey down the valley of the Nile. He was to be the head of an expedition in active charge of R. J. Cunninghame, of Nairobi, the headquarters of the Uganda Railroad. Not only is Mr. Cunninghame one of the most expert of African sportsmen, but the party was also to include F. C. Selous, the famous hunter and author. Mr. Roosevelt's son, Kermit, who accompanied him from the first, was to be official photographer of the expedition. On March 30th the "Hamburg" arrived at St. Michaels, the Azores, where the Roosevelts were received by the American Consul and given God-speed toward Gibraltar. The steamship made the British stronghold April 2nd, and after Mr. Roosevelt and his son had been entertained by the commandant the voyage was continued to Naples. There the ex-President was greeted with all the honors due to his distinguished character, and in its glorious harbor he found awaiting him, gaily decked with flags and crowded with welcoming crew, passengers and visitors, the steamship "Admiral." The latter was to bear the party to Mombasa, the port of entry and capital of British East Africa, and the beginning of the great Uganda railroad, or backbone of the Big Game Hunting Grounds. It was at Naples that Mr. Selous joined the party and for nearly two weeks thereafter, or until the boat landed at Mombasa, the ex-President's appetite for action was whetted daily by the

ROUTE OF ROOSEVELT'S
AFRICAN TRAVELS AS
PUBLISHED IN THE
OUTLOOK.





Copyright 1909, by
Underwood & Underwood

NATIVE TROOPS OF EAST AFRICA

narratives of his companion, covering his own huntings of big game in the country to which they were bound. The impressive incident of the voyage was the stop at Messina, April 6th, during which Mr. Roosevelt met King Victor Emmanuel, received the royal thanks for American sympathy and generosity in behalf of the earthquake victims, and then, with unconcealed



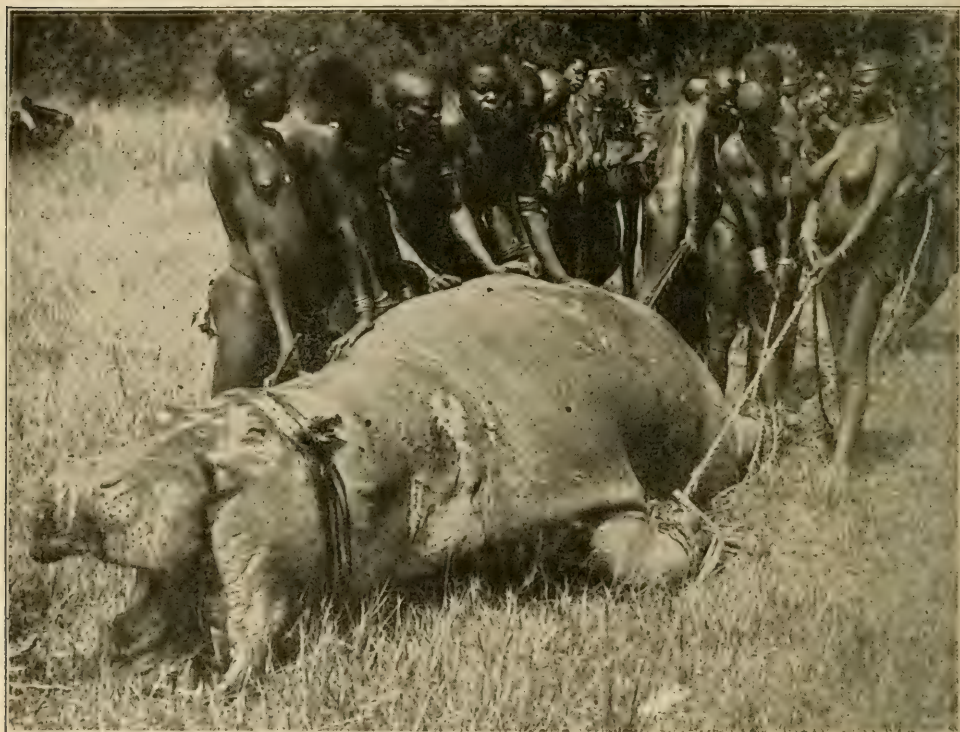
emotion, viewed the pitiful ruins of the stricken city. The "Admiral" arrived at Port Said on the evening of April 9th, and about half way between the Mediterranean and Red seas the scientific branch of the party landed to make a collection of bird specimens. The only other incident which occurred in the Suez canal, worthy of comment, was the passing of the "City of Paris," crowded with British passengers, who heartily cheered the ex-President and had the satisfaction of seeing his famous and infectious smile when he noted the large "Teddy bear" displayed on deck. The "Admiral" passed out of the canal on the evening of the following day; left Aden, Arabia, April 15th, and after running down the dreary coast of the Red Sea, with only a short stop at Somaliland, on the 21st of April landed the party at Mombasa in the midst of a pouring rain, notwithstanding which, the shore was crowded with Europeans, Indians and natives, and a military guard was drawn up in honor of the ex-President, who was welcomed by the provincial Commissioner and conducted to the government house. Mr. Roosevelt was dined and hospitably entertained, but, with the enthusiasm of the true sportsman, made his preparations for the hunt as rapidly as possible.

HUNTING PREPARATIONS AND OUTFIT.

The first thing to do is to secure a hunter's license, and it is a fair illustration of Roosevelt's democracy, as well as of his true sportsmanship, to state that he refused to accept special privileges, but insisted upon abiding by the common laws governing the killing of big game. These provide for a license ranging from \$85 for a bull elephant to \$25 for a giraffe or rhinoceros and \$15 for an antelope; limit the killing to two each of elephant, rhinoceros, hippopotamus and zebra and classify and protect as Royal Game not only these animals, but buffalo, eland, impalla and ostrich. Lions and leopards may be killed without a license, as they are classed as "vermin," pests fit to be exterminated. Further, shooting from trains is forbidden; so that the big game of British East Africa is protected against reckless and unsportsmanlike slaughter.

In employing native help, it is usually figured that thirty porters (at about \$4.50 per month) will be required for each white in the party, and the average load is sixty pounds. Gun bearers and caravan headmen are paid about three times that amount, if they be Swahili, and some \$25 per month if Somali. Allowances are also made for food, and if the hunter wishes to abide by the strict letter of the law he takes out a government caravan license. The latter

binds you to pay your men what you stipulate, provide each with not less than a quart of cereals a day, and a water bottle and blanket, and furnish each gang of eight with a tent and cooking pot. The legal allowance of food, however, would be far from satisfactory to the average native. It is generally supposed that the inhabitants of cold countries are the great meat eaters, but the stories told of the quantities of meat consumed by the porters and other natives at-



Copyright 1909, by
Underwood & Underwood

NATIVES WAITING FOR MEAT.

Hippopotamus dragged from Victoria Nyanza, with six bullets in his head.

tached to a "safari," or African hunting party, would discount the tales illustrating the capacity of the blubber-eating Esquimaux. They grumble if they do not have fresh meat daily; and they not only pick the bones clean, but extract the marrow. A fair-sized party will consume two elands and waterbucks daily, if the hunters can furnish them with such rations.

BRAVEST NATIVE HUNTERS OF AFRICA.

From all accounts, there is a very good reason—in fact, many good reasons—why the Somali helpers, or shikaris, command the highest pay of all the native hunters of Africa. They are scrupulously clean and, like all Mohammedans, absolutely temperate. Fatalists in religion, they have no fear of death. If they are to die by the terrible jaws or paws of a lion—they die; that is all there is to it. With their light complexions, wavy hair, tall, slender and wiry bodies, they are largely Arabian, both in appearance and in fact. As proclaimed by one who has cause to stand by his words, “Nothing connected with East African lion shooting is more heroic than the conduct of the Somali shikaris. No Sahib who treats them half decently is likely to find cause to complain of their fidelity. When peril threatens, they are as ready to die for him as most others are ready to desert.” Countless stories are told illustrative of their intrepidity. For instance, the fresh tracks of a lion lead to the mouth of a dark cave, high enough only to admit the two Somalis who, without a moment’s pause, start for the opening, one armed with a rifle and the other with only his skinning knife. The white Sahib shouts a protest and a warning, at which one of them answers cheerily, without a tremor in his voice, “Inshallah [God willing] we come back.” They then enter the cave and even toss stones into its darkness, inviting in every way, a charge of the terrible king of beasts. Again, a wounded lion charges a white hunter and his Somali gun bearer. As the beast crushes the former to the ground, the rifle, which had previously been broken and imperfectly repaired, falls apart. Being unable to fire it to advantage, the Sahib rams the gun barrel down the wounded lion’s throat. As the two lay struggling on the ground—the beast commencing to maul the hunter most fearfully—the Somali circles around endeavoring to find an opening to dispatch the lion with the rifle in his possession. After several vain attempts, the native drops the gun and springs upon the back of the infuriated beast, biting its ears and pounding its eyes with such ferocity that it turns upon him and all three fall to the earth together—the Somali beneath the lion and the effective rifle under both. This diversion gives the Sahib an opportunity to arise, pull the weapon free and blow out the lion’s brains, thus saving his faithful and brave follower from the death which he invited in order to rescue his chief. The air of the hunting grounds in British East Africa is full of such stories, and it is therefore quite natural that the true white sportsman is perfectly willing to pay the high wages so

fully earned by the Somalis. Besides such invaluable native hunters, a *safari* must have a number of Somali ponies and Abyssinian mules.

An outfit for one man will usually consist of a white *safari* (or party) leader, a headman, gun-bearer, cook, mess-boy and tent-boy (all Somalis); from twenty to twenty-five native porters; tents, beds and provisions—all furnished at from \$3.50 to \$5.00 per month.

As on all subjects under the sun, experts disagree as to the most effective weapons and balls to be used on big game. Heavy-bore rifles have, as a rule, been discarded, and perhaps the favorites of the present day are English double-barreled .450 cordite for big game, and a magazine rifle of .256 to .350 for deer and smaller quadrupeds. Upon one point the hunters of big African game now generally agree, that is, "Avoid throwing your lead into the animals, unless you have a fair chance of reaching brain, heart or spine"; for such is their extraordinary vitality that, irrespective of hits, they run the faster if the bullet does not strike a vital organ. When a hartbeest bull will carry nine big Mauser bullets in his carcass for two miles before slowing up, and a "hippo" twenty-two 303's before admitting himself beaten, it is the wise part of the hunter to wait for his opportunity to get a fairly fatal shot.

THE TRUE AFRICAN SPORTSMAN.

Theodore Roosevelt is built on the lines of the true African sportsman, who glories in the fact that there is no land in the world which offers such hazard of limb and life, in the pursuit of game, as his own. Not one of his big game but will easily carry as much imbedded lead as the grizzly bear; and bruin cannot compare with the lion, buffalo, elephant or rhinoceros in the impetuosity of his charge. The old and true African hunter has nothing but the most intense scorn for the white who would poison a lion or a leopard, and has even little patience with him who lays set guns or traps. In the interests of science, the capture of smaller animals may be thus made, but it is to the typical African hunter an exhibition of inexcusable cowardice for a man to thus destroy big game. When there is more than one white hunter in the party, it is customary for true sportsmen to agree before setting out upon the division of the killings and the order of first shots, some even preferring to pitch their camps at least twenty miles apart in order to avoid any crossing of lines or conflicting claims.

The idea is rather exploded that, in order to get the most out of a big-game hunt, one must go into it without taking comfortable tents, an abun-

dance of provisions and a big medicine chest. "Roughing it" is all right; but the hunter will get enough of that, with probable attacks on life and limb, in the natural order of his trip, without endangering his health and sapping his strength by exposure to tropical dew, rain and insects and the eating of unhealthful foods. Native villages or railway points are usually relied upon for eggs, flour and vegetables, but all modern parties, like the Roosevelt expedition, now lay in a good supply of sugar and canned meats and tomatoes. The medicine chest must contain, above all, an abundant supply of lint bandages, besides the usual antidotes for poisons and powerful cauterizers to prevent fatal results from possible wounds inflicted by the terrific carrion claws of His Royal Highness, the King of Beasts. Brandy and champagne are also considered desirable as medical supplies, but the true sportsman knows how necessary it is to confine all liquors to their legitimate province, for the moment they are taken as indulgences the capacity of the drinkers for endurance and keen work is materially lessened.

SCOPE OF THE ROOSEVELT HUNTING GROUNDS.

All such preparations having been made by the great expedition, of which Mr. Roosevelt was the most distinguished member, the party boarded a modern railway train drawn by an American Baldwin engine and pulled out from Mombasa for the Kapiti plains, the districts adjoining the headwaters of the Athi and Tana rivers and the Mount Kenia region—which were to be the main hunting grounds thrown open to the ex-President. This great district embracing every variety of African country—plain, jungle, swamp, forest and hill—not only swarms with game, both big and small, but contains fifty varieties of the larger species, and is therefore probably unexcelled anywhere in the world. It lies northeast of the railroad, with Nairobi as its central station, and is almost midway along the line, which extends 584 miles from Mombasa to Port Florence, the terminus, on Lake Victoria Nyanza. To be quite accurate Nairobi is 327 miles from the Indian Ocean, but this central section of the Roosevelt hunting grounds extends considerably north and far east of that city, the headquarters of the Uganda railway. This is the paradise of the modern African hunter, not only because of the abundance and variety of great game, but from the fact that several of the famous sportsmen of the world have established there magnificent ranches, or private hunting grounds, on which they entertain with the lavishness befitting their rank. Among them are the splendid Heatley, Pease and McMillan estates, the mas-

ters of which threw open their homes and grounds to Mr. Roosevelt. There are great government reserves, both north and south of the railroad, extending from Tsavo to Kijabe, some two hundred and thirty miles, and the railroad



traveler soon notes that these sections of the protectorate are literally crowded with game of every description. But the animals themselves seem to know the limits of their safety and also the game law forbidding shooting from trains, and seldom leave the reserves except in periods of extended drought;

while not only such "vermin" as lions and leopards boldly stand near the track and gaze at the tantalized passengers, but the timid gazelle and the wary giraffe appear to discard their very natures.

AWFUL COST OF THE UGANDA RAILROAD.

When the statistician finds that about \$35,000,000 was spent in the building of the Uganda railway from its commencement, in January, 1896, to its completion, in 1902, he pronounces the cost great. The philanthropist and the enterprising citizen of the world asserts that the cost was small, considering that it has changed the face of a large portion of Equatorial Africa; opened up a wonderful country for the scientist and cartographer and a land full of charms and surprises for the artist; thrown safeguards around the lives of the Christian missionaries; introduced the world to one of the most advanced and promising native states of Africa; created a real scenic railway for the pleasure and instruction of thousands of travelers—in fact, driven a great wedge into interior Africa for the entrance of civilization, and last (but greatest in the estimation of the hunter of big game), made it possible for the true African sportsman to be placed, comfortable and fresh, in his hunting grounds, prepared to give the full strength of his body and the keenness of his mind to the strenuous work before him. The journey of nearly six hundred miles from the coast to Lake Victoria Nyanza, taken by the cumbersome caravan at an expenditure of three months' time and a small fortune in money, is now accomplished in less than forty-eight hours at a cost of from \$5.84 to \$40.4. The railroad rates are six cents, three cents and one cent per mile, according to the class of accommodations. It is not on record that any white man has ridden the 584 miles on a third-class ticket in the "Jim Crow" cars; the latter are monopolized by the natives. Jim Crows, in turn, are barred from the first and second-class cars, which are comfortable and cool.

If only seven million British pounds had been expended on this great creation of New Africa, the cost would indeed be small in view of what has already been accomplished and the far greater benefits of the future. But disease, poisonous insects and reptiles, and, more terrible still, the carnivorous beasts of East Africa, collected an awful toll of human life before the Uganda railway was completed. Although some of the warlike native tribes, such as the Masai, gave the early surveyors and builders some trouble by cutting off scattered parties, the agents before mentioned were chiefly responsible for the great sacrifice of life. What has been said of this country is true of any

tropical land—"if a man has any physical weakness, Africa is certain to find it out"; and it is generally accepted as the final word that no white man can maintain the strenuous life in Africa for more than five years. In spite of the liberal use of quinine, fevers and malaria laid low hundreds of railroad builders, while toward the lake terminus the silent, insidious tsetse flies inoculated many native workmen with the fatal Sleeping Sickness.



A FINE LIONESS.

But the man-eating lions were the supreme terror and scourge of the builders of the road, and they alone added to its cost more than a human life per mile. The greatest campaign conducted by the builders against the man-eaters was in the vicinity of Tsavo station, about 130 miles from Mombasa. After twenty-nine native workmen had been killed and eaten, and others attacked and badly mauled, three young railroad engineers side-tracked a car at a place near the station where a few days before a lion had sprung upon a slowly-moving train, like a flash seized a man in one of the open cars and

leaped with him (as a cat would carry a helpless mouse) into the jungle. The would-be avengers of this horror, and many like it, arranged to have one of their number on constant guard, with rifle in hand, ready to shoot the blood-thirsty prowlers at a moment's notice. The closed car was strongly built and, as the sentry on duty placed himself so as to always command the doors and windows, the risk was not considered great. But at the midnight watch young Ryal, overcome by the tropical heat, fell asleep, and the huge man-eater, who had kept even closer vigil than his human victim, crept through the half-open door, seized the sleeper in his great jaws and sprung through the glass of one of the windows into the jungle. Not long after, the picked and whitened bones of Ryal were found in the vicinity. This death of a white engineer, under such circumstances, resulted in the organization of a great hunting party under J. H. Patterson, of the engineering corps, and among the lions killed was one identified as the slayer of Ryal; for in his hide, only recently healed, were found several pieces of window glass.

SPECIAL OBJECTS OF THE EXPEDITION.

The main preliminaries of the great Roosevelt expedition have been described; in other words, the background and setting of the hunt have been placed in the picture. Special inquiries will then arise, naturally and legitimately. The first may be, what are the special objects of this expedition? The uninformed may imagine that it is only a junketing trip for the special recreation and amusement of the hearty ex-president. Roosevelt obtained a necessary outing and had his inning with the big African game, but the serious and special object of the expedition, as announced by Secretary Charles Walcott, of the Smithsonian Institution, in December, 1908, is to gather specimens of natural history—beasts, birds, and plants—for the government museum embraced by the institution named. The regular representatives of the Smithsonian Institution were Major Edgar A. Mearns, a retired officer of the medical corps of the United States Army, and Messrs. Edmund Heller and Alden Loring. Mr. Roosevelt was the general head of the expedition and R. J. Cunninghame was in active charge, being upon the grounds before the arrival of the main party, selecting porters, hunting animals and a complete outfit. Mr. Cunninghame was both an expert African hunter and had previously made collections in natural history for the British Museum. Mr. Heller, a graduate of Stanford University, was an expert taxidermist, and had traveled over both the

Americas in his expeditions for the Smithsonian Institution. Mr. Loring was also a thorough student of natural history. So that the personnel of the party representing its scientific spirit, was everything which could be desired in the matters of earnestness and efficiency. When F. C. Selous joined the expedition at Naples, Mr. Roosevelt and his



Copyright 1909, by
Underwood & Underwood.

AN EXTRA FINE FEAST FOR THE BOYS.

son Kermit had the privilege of meeting one of the most famous hunters of African game in the world. Both he and Mr. Cunninghame, with the hosts who entertained the visiting Americans, saw to it that neither father nor son were placed in unnecessary danger. Notwithstanding which the Roosevelts repeatedly demonstrated their wonderful marksmanship and coolness.

ROOSEVELT'S GUNS AND AMMUNITION.

As was characteristic, Mr. Roosevelt proclaimed his positive nationality even in the matter of selecting the weapons and ammunition for his "safari," discarding even the standard British arms and entering the hunting grounds for big game with an American repeating rifle of far lighter bore than that in common use. It is known as the "forty caliber" and although thirty years ago it would have been considered suicidal for a sportsman to contend with lions, rhinoceri and buffaloes with such a "toy," improvements in high pressure, smokeless powder and bullets have rendered the rifle a most effective weapon for the strong-lived game of Africa. With the soft-pointed bullet to tear through the comparatively tender hide of the lion and buffalo, opening out like an umbrella in its passage and making terrible gaps in its progress, and the keen pointed steel bullet for the tough rhinoceros or hippopotamus, the American rifle of .405 caliber and terrific smashing power proved its superiority on many a hotly contested hunting field. For lighter game, such as deer and gazelle, Colonel Roosevelt carried .303 caliber repeating shot guns, popularly known as "thirties," and for feathered game he had two twelve-gauge repeating shot guns. His shot gun ammunition was specially loaded for him in brass shells, and the wads were carefully covered with wax to be waterproof and prevent their swelling in the moist climate of the country.

OFF ON THE ROOSEVELT SAFARI.

Less than two days were spent by Mr. Roosevelt and his party at Mombasa, but they were sufficiently full of action even for the ex-president. Upon his arrival at the railroad station he found a guard of honor, composed of marines and blue jackets from the British cruiser "Pandora," drawn up to receive him, as well as various officials and civilians. The station was decorated with intertwined American and British flags. The ex-president was the special guest of F. J. Jackson, acting governor of the protectorate, and in the evening the Mombasa Club entertained him, with his son Kermit, Edmund Heller, F. C. Selous and R. F. Cunninghame. Major Mearns and J. Alden Loring, the other members of the party, had not disembarked from the "Admiral" on account of the heavy rains. Mr. Jackson, in proposing Mr.

Roosevelt's health, first read a cabled message of welcome from King Edward, and then smilingly remarked that their honored visitor had left the "big stick" at home and had come out to Africa to make use of the rifle, concluding by promising him an immense variety of game and good sport. Mr. Roosevelt replied by praising the British people for letting light into the dark places of the earth, and for their wonderful work in East Africa. He expressed pleasure over every feature of his reception and briefly referred to his future plans. On the following morning the ex-president sent a telegram to the Emperor of Germany thanking him for the courtesies received aboard the "Hamburg," having previously thanked King Edward for his message of greeting. He then spent the remainder of the forenoon at the government house, while Mr. Cunninghame was flying around among the porters and other "articles" of the safari making final preparations, and the other members of the party were occupying their time, previous to the departure of the train for Kapiti Plains, in driving around the city.



MOMBASA TO NAIROBI.

OLD MOMBASA, OR THE BATTLE CITY.

What did Roosevelt and his party see on the first limb of their trip over the Uganda railroad from Mombasa to Nairobi, which was for months the headquarters of the great hunt, as it is of the great East Africa railroad line? During their short rest at Mombasa they saw a picturesque jumble of Old and New Africa in a town of 30,000 people—lithe, dignified Arabs, stout Soudanese, calm and swarthy Indians, alert and often uniformed Somalis, stolid British officials and polite army and navy attaches—the native populace numbering some 29,500. From the shores of a low-lying and small island, at some distance from the Indian Ocean, rises the white Moorish walls of Old Mombasa, Portuguese Mombasa, or “The Battle City.” And well has it earned its native name; but the sieges and counter-sieges which it suffered at the hands of the Portuguese, who craved it as the great depot of the trade in ivory, skins, rubber and slaves, and of the Arabs, who naturally wished to hold it, came to an end when the Imperial British East African Company opened up the country, in 1887. It was surely time that the wars over its possession should cease, for they had been in evidence since the Portuguese first bombarded and looted the city in 1500. Portugal again destroyed it in 1505, fortified and rebuilt it a few years later, and was expelled by the Arabs

in 1586. Not many years after a Portuguese admiral battered the city to the ground; next it was ravaged by an "irregular" savage tribe; and Portugal returned in 1630 to construct the massive fortress whose ruins still overlook the sea. Next it was the turn of the Arabs, whose archers shot the garrison to death after its surrender. Another Portuguese fleet avenged the outrage, and in 1665 the fortress fell before the five months' siege of the Arabs. The Arabs held complete possession of the island from 1698 to 1826, when the Sultan of Zanzibar, after four years of terrific warfare, conquered the Battle City and adjoining territory. Then followed over fifty years of wars and feuds in which Mombasa was dragged back and forth, wrenched and tortured in every joint, until the coming of peace and order under the protection of Great Britain; and now what is left of the old Portuguese fort overlooks the mansions and bungalows of European officials and merchants, surrounded by large and elegant gardens.

NEW MOMBASA, THE BRITISH CAPITAL.

New, or British, Mombasa, which lies nearer the ocean than the old, contains also the government buildings and the cathedral. A noticeable feature of the modern town is the intricate network of tramways, which not only cover the chief thoroughfares, but branch off to every house; and coolies are seen everywhere, pushing along the private cars which transport the aristocratic Europeans to and from their offices. Although the two or three hotels in Mombasa are but indifferent, there is an excellent club, which is patronized by Englishmen, Americans and travelers in general. The East India Bank is also an important feature of the modern city. New Mombasa has a hearty welcome for white visitors, but, unfortunately, possesses no harbor worthy of the name. Some two miles to the southeast, however, is a sister port of Kilindini, whose harbor affords anchorage for ships of the largest tonnage and which even rivals the far-famed Delagoa Bay in Southeast or Portuguese Africa. Kilindini harbor, therefore, first receives the important passengers and cargoes destined for British East Africa and Mombasa. The trade in ivory and hides has also gone to the more convenient port, and it is not beyond the possible to foresee a shifting of the government headquarters and the railroad terminus to this admirable commercial center.

CLIMBING THE DESERT OF TARU TO VOI.

From the Indian Ocean the Uganda railroad climbs steadily to the high northwestern plateaus at Nairobi; and more than one hundred and fifty miles beyond, where it reaches its extreme elevation of more than 8,300 feet above sea level. The train pulls out of Mombasa, glides past the large freight depots and docks at Kilindini, and in a few minutes is thundering over the seventeen hundred feet of iron bridge which spans the strait between the city and the mainland.

The nine miles of road intervening from this point to Mazeras station takes the traveler through a country of cocoanut palms and mangoes and along the route are well-kept Indian plantations, neat Wayganika and Swahili cottages and villages, and other evidences of New Africa and the civilizing effects of the modern railroad. The entire narrow belt of country between the coast and Mazeras station, which marks the commencement of a desert country, is seen to be lined in every direction with little brown paths leading from the open places into the copse or jungle, or toward the palisades enclosing native huts, the larger collections of which are called, by courtesy, villages.

TARU DESERT AND OLD CARAVAN ROUTE.

From Mazeras to Voi, the distance is ninety-four miles, and as the native farms and villages of this pretty belt of country, interspersed with remnants of forest growth, are left behind the road enters the dreary waste known as the desert of Taru. It is true that patches of dry grass, or thorny growths, are scattered over its surface; but as Roosevelt and his fellow travelers viewed from the comfortable seats in the speeding train the old caravan road stretching ahead for mile after mile over this juiceless and sandy plain, they were doubtless thankful that they were living in the new days. The desert is by no means destitute of animal life, herds of gazelles, packs of jackals, a prowling hyena, and an occasional leopard or lion, moving unconcernedly over its surface. But it by no means compares with the natural zoo which is offered further to the North.

GLORIOUS MOUNT KILIMANJARO.

At Voi, one hundred and three miles from Mombasa—about a third of the distance to Nairobi—the government has provided a comfortable bungalow for the accommodation of tourists who may wish to stop off and trek it, one

hundred miles to the Northwest, to that splendid glittering and burnished zone, seen from Voi, like a shimmering blaze in the clouds and known to lovers of nature as one of her most glorious exhibitions. Geographers call it Mt. Kilimanjaro and describe it as the highest peak in Africa, 19,200 feet above Mombasa at the sea. "The Mountain of the Spirit Njaro" appeals to all the unbounded superstitions of the native African; and well it may. A good government road leads from the railroad to the very base of the mountain, if the tourist decides to make the trip. If taken afoot, especially in the hot season, it is a most trying walk; but it is nothing compared to the ascent of the mountain itself—the climbing from a heat of some 110° Fahrenheit, through forests of bamboo and cacti, into the region of gradually thinning vegetation, to the rocks and eternal snows and glaciers, whose radiant reflections are seen from Mombasa, Voi and Nairobi. The scaling of the very summit has been accomplished only two or three times in the world's history.

HOW THE GAME IS KILLED IN THE RESERVES.

Near Tsavo, the first station beyond Voi, on both sides of the line commences the great game reserves of the British government, extending on the north for some 230 miles to the vicinity of the dizzy escarpment, or cliff, over which the line almost pitches into the grand Rift Valley. But this is taking time by the forelock indeed, since the Roosevelt train has but just pulled out of Voi and is speeding through the grounds in which the big game of the land find refuge and safety from human hunters. From human hunters, yes; but the reserves are the slaughter pens of the small or peaceable game by the big and ferocious animals. Thousands of tiny soft-eyed antelope, mottled sleek-coated zebras and long-legged, long-necked ostriches feed over the plains of jungle grass, broken by hills and mounds and wander fearlessly close to the tracks. The stately giraffe is also seen abroad, with his sinuous neck moving around in the tree tops, like the animated trunk of a slender date palm. While they thus swarm in seemingly conscious security in these reserves, the lions, leopards, hyenas and jackals gather in the same district and there satisfy their blood-thirsty appetites. Seeming to fully realize its exemption from attack at the hands of human kind, game of every description is continually crossing the tracks. It may be a stately lion, or lion, lioness and cubs; a creeping, snaky-looking leopard; or even a large herd of elephants traveling from the bamboo forests of Mount Kilimanjaro to more northern feeding grounds. In the last case the train slackens its speed and may even be brought to a full

stop. If smaller game is in the way—well, accidents will happen, and the average engineer on the Uganda railroad is like others of his brotherhood, anxious to be on time. Game is therefore frequently killed by locomotives, and it is said that its engineers, switchmen, station masters and even section



Copyright 1909, by National Magazine.

ZEBRA ATTACKED BY A LION.

hands are prone to take greater chances for accidents, by running over animals which interfere with them, than most railroad men in civilized countries. They claim that otherwise the Uganda railroad would always be a slow, unreliable, unprogressive concern, and of no great use to either travelers or commerce.

FROM VOI TO KAPITI PLAINS.

The country north of the Uganda Railroad from Voi to Makindu, two hundred and fifty miles from Mombasa, is a jungle of plains broken by grassy hills, and is but preparatory to the fresher stretches of the Kapiti plains and the Athi district. From Tsavo to the Kapiti plains, a distance of one hundred and fifty miles, there is no white settlement. North of the track and beyond Kapiti the settlers are widely scattered through a belt of forty miles.

Occasionally, on the trail, a safari will pass a native village, the chief of which usually attempts to hold up the head man for "hongu," which may be interpreted as either blackmail or presents—according to the manner of the chief or the temper of the head man. The Roosevelt party, and all other expeditions which expect to do much traveling afoot, laid in a good stock of trinkets in order to save vexatious contentions with these persistent chiefs, and also to be prepared to barter them for the agreeable articles of food as may often be obtained of the native villagers—articles both of native raising and compounding. Aromatic honey, sweet potatoes, sugar cane, pumpkins, Indian corn and the ever present banana are not to be despised on a long "safari," when the party is a little short of provisions of its own. Better still, the white cook may pound the corn into a meal, fry it in butter and make a really appetizing cake. The natives themselves often mash and boil the green banana, which, although uninvitingly black and mushy to look at, is wholesome and pleasant to the taste. Mr. Roosevelt and his expedition did not reject this sticky looking mess entirely—but, as a rule, they preferred food whose appearance was a better recommendation for its flavor.

THE GREAT HUNT STARTED.

Mr. Roosevelt and his party left Mombasa for Kapiti Plains at 2:30 P. M., April 22nd, accompanied by Acting Governor Jackson, their immediate destination, after they left the railroad, being the splendid ranch of Sir Alfred Pease on the Athi River, in the midst of the beautiful Kapiti Plains. It was in the prime of the season for lion hunting. The big rains were well over; the plains were waving with short crisp grass, and such cool breezes were playing through it that the lions roved freely abroad, instead of seeking cover to escape the tropical sun. Although Sir Alfred's place is called the Theki ostrich farm, from the very

fact that it comprises one of the biggest and most scientific breeding grounds for these birds in East Africa, both it and the surrounding country have the reputation of being unexcelled as a resort for the tawny-maned cat. Covered with short grass and devoid even of bushes, Kapiti plains are seamed with ravines, filled with weeds, reeds and thorns—with here and there pools of sweet water, which are very magnets to the Kings either in the cool or hot seasons. Nature specially designated the "Theki ostrich farm" as the ideal launching grounds for the big hunt.

But its generous proprietor and royal host had by no means left the success of this step of the expedition to nature. For weeks he had been arranging for the coming of Roosevelt, and had even built a beautiful substantial bungalow for the reception of the chief and his associates. It is needless to add that they gratefully occupied it for a short time before setting out on their exciting and successful hunt. The bungalow had been christened "Kitanga"; it has a tin roof, with outer walls of gray granite blocks; and its central living and dining room and four bedrooms are divided by walls of sun-dried brick.

The first night of the Roosevelt expeditions in Africa was passed in tents near the railway station at Kapiti plains, and was April 22nd. The next morning the "Mombasa Standard" published a violent attack on Acting Governor Jackson and Mr. Roosevelt for alleged partiality for American journalists, who were said to be favored with passage on the special train to Kapiti Plains and English newspaper men excluded. The charges were found to be groundless, but created a little feeling of uneasiness for the time being. It was the intention to leave at once for the Pease ranch, but it was discovered that some of the baggage sent by the Smithsonian Institution had been left at Mombasa, and the expedition therefore pitched camp near the railroad station. Mr. Cunnninghame sent back for the missing goods and Messrs. Roosevelt, Jackson, Selous, et. al., proceeded to prepare for a preliminary small-game hunt. Colonel Roosevelt arose early the morning of the 23rd, and his high spirits continued even after he learned of the grilling he had received by the Mombasa newspaper. He proceeded at once to look over his outfit and consult Mr. Selous about hunting plans. Before he had started Kermit came in with a dead buck which he had shot, thus forestalling his strenuous father. With the assistance of Mr. Selous and a red handkerchief, Colonel Roosevelt then succeeded in bringing

down two wildbeests and a Thompson's gazelle. But the thoughts and eyes of the ex-president and present hunter of big game were turned toward Sir Alfred Pease's ostrich farm and its roaming lions. The next day the Roosevelt expedition broke camp and arrived at "Kitanga" in the midst of a tropical rain; but aside from their comfortable housing, the most complete arrangements had been made for their comfort, so that the next day found all in prime condition for the formal opening of the hunt. Another day passed, and the ex-president had only a Grant's gazelle and a couple of bucks to his credit, although there were the unmistakable roarings and other evidences that lions were abroad in the country around. The next morning the caravan proceeded toward the Mau hills where its camp was pitched. Another day, with only small game bagged; but great work accomplished by Kermit's camera and by Messrs. Loring and Heller in the cause of science. Mr. Selous accompanied the ex-president on his first lion hunt and killing. The native beaters first discovered three lions, and while two bounded off into the high grass the third charged, and was shot in the air by Colonel Roosevelt. The next hunt called for more patience in tracking his lordship, the lion evidently taking to the river bed. But the beast was finally located and driven out into the open by the beaters, and was shot through the heart by the American as the animal was making one of those famous whirlwind charges described as "the swiftest thing on earth." Following the advice of Cunninghame, Selous, Pease and other experienced lion hunters, Mr. Roosevelt had been careful to have his pony led some distance behind, as the latter is apt to make some noise, such as snorting or stamping, to alarm the lion. Another reason for this rule: The lion is very fond of horse meat of every description, the sight of a sleek zebra or a fat Somali pony often inviting him to a furious attack when otherwise he would give his followers a wide berth. Before the sun had set on this 30th day of April, 1909, Mr. Roosevelt's good American rifle had brought three lions to earth, and each on the first shot, while Kermit had proved his relationship by killing one of the big beasts. Both father and son were jubilant as their first lion hunt had exceeded all expectations. All the lions were of normal size and after the natives had dragged them together in the grass they executed the usual picturesque and weird dances around the trophies. It is said that Sir Alfred Pease made an effective sketch of Mr. Roosevelt as he was shooting his first lion over the shoulder of a native gunbearer, at

a distance of sixty yards. Two days after the red letter 30th of April he bagged another lion at Wami, near Kapiti Plains, and upon this occasion his quick work at close range perhaps saved the lives of some of his mounted escort who were being charged by the infuriated beast. It is certain, with all the safeguards thrown around him, that he gave repeated instances, during the first week of the real hunt, of wonderful nerve, and that he aroused general admiration at his accurate marksmanship.

The Roosevelt party remained on the great Pease ranch for about three weeks, during which period the Colonel killed four lions, two rhinos, two giraffes, two wildbeests and one Thompson's gazelle, while Kermit bagged two lions, one cheetah, one giraffe and one wildbeest. While all the members of the expedition were bitten by ticks, none developed the dreaded fever. But several cases of smallpox were discovered among the porters. Otherwise, all was serene until the expedition commenced temporarily to scatter. Mr. Roosevelt and his son prepared to hunt another kind of game on the famous Juja ranch of W. N. McMillan, east of Nairobi. There were especially sought the impalla, buffalo, wart hog and waterbuck, and the Roosevelts were accompanied to the McMillan grounds by P. H. Percival, brother of Major Percival, one of the assistant game wardens, and Clifford Hill, who was once associated with the Pease ostrich farm and now, with his cousin, conducts one of his own. They are both great lion hunters as well as ostrich breeders; are English colonists who have never seen England; bred in South Africa; ex-soldiers of the Boer war and emigrants to East Africa.

FROM KAPITI PLAINS TO NAIROBI.

The country from Kapiti plains to Nairobi is a gradual melting into the more rolling and less seamed surface of the Athi river district. It is the approach to the region of fine plantations and the threshold of those wonderful grounds so interesting and thrilling both to the scientists and sportsmen of the Roosevelt party. Toward the east and the north, the land is simply a vast spill-over for the teeming game reserves to the south.

At this stage of the Roosevelt expedition many rare birds as well as fine zoological specimens had been obtained for the Smithsonian Institution, and while they are being prepared for shipment to the

United States, it is a good opportunity to briefly note the special and less known victims of the Roosevelt rifles and shotguns; also to describe one of the most enterprising and modern cities of Africa, which for several months, was to be the nucleus of the expedition. The big game country in all its glory was yet to be entered beyond Nairobi, and the Kings of beasts which make it their home will be treated in their logical order. The most interesting smaller game bagged by the party up to this point, were the wildbeest, impalla, water buck, Thompson's and Grant's gazelles and the wart hog.

The species of wildbeest bagged by the Roosevelt expedition is the white-bearded gnu, the only kind now common to East Africa. Its general appearance is familiar. If the genus is ever exterminated, the final undoing of the beast can be traced to its inordinate curiosity, which it shares in common with the antelope and gazelle; but the trait is most abnormally developed in the wildbeest. The animals go in herds of from twenty to fifty, and as they prefer such open, sunny ground as the Kapiti and Athi plains, they stand out more ponderous than they really are, hunters not infrequently mistaking them for rhinos at a distance. The bulls exhibit the same fury toward red as the domesticated article and although they are stupid looking beasts, as they stand motionless in the open plain with the hot sun shining down on them, they are really so alert that other species of game will often impress an old bull who has no herd of his own kind to do sentry duty. When a herd of wildbeests is disturbed, the animals usually go off at a lumbering gallop which takes them over the ground at a pace which usually puts the best horse to shame. When in motion their tails rapidly vibrate, which is also a peculiarity of the galloping giraffe.

The impalla and water buck, of which both Mr. Roosevelt and Kermit obtained some fine specimens, are among the most graceful of African antelopes. They are generally found together—the impalla with slim bodies of bright red with beautiful spreading horns, and the water buck with long shaggy hair of a less pronounced red, with a bolder sweep of the horns. The old African hunters who were with Mr. Roosevelt were well aware that the impalla and water buck have been classed as the most regular in their habits of all known animals. In this particular they give an exhibition of instinct which is among the most remarkable in the animal world.



ROOSEVELT HUNTING GROUNDS

Eastward from Nairobi, between the Athi and Tana rivers and for miles around Mount Kenia, is the great region which has well been termed the paradise of hunters for big game. It is a country so varied in surface and soil—presenting jungles, dry plains, grassy hills, rocky steeps, wooded streams—that no variety of famous game is without a home and retreat. Even the monkeys have their inaccessible grounds in the region of Mount Kenia.

NAIROBI AS THE GREAT OUTFITTING POINT.

Naturally, Nairobi is the central point for the final organization and outfitting of the hunting expeditions, or caravan parties (safari), and in the busy season (say from December to March) it is nothing unusual to see two or three starting out daily. The caravans are also arriving from the East and Southeast, some even overhauling the train and obtaining more modern transport than afoot, the porters loaded down with antelope meat, elephant tusks, lion skins, and other trophies of the chase. On the same train which pulls into Nairobi may be a refrigerator car packed with ice, fresh sea fish and foreign fruits and vegetables. These are probably consigned to some European or Hindu merchant—most likely the latter—who will easily dispose of his stock to the hotels, the thousand or more English, German and American residents, or the aristocratic and, at the same time, democratic plantation owners to the East.

HOSPITABLE PLANTERS OF THE HUNTERS' PARADISE.

To these great estates, some of them many thousand acres in extent, good roads lead across country from the railroads, some hundred miles in all directions. Not only does this new landed aristocracy make some attempt at rais-

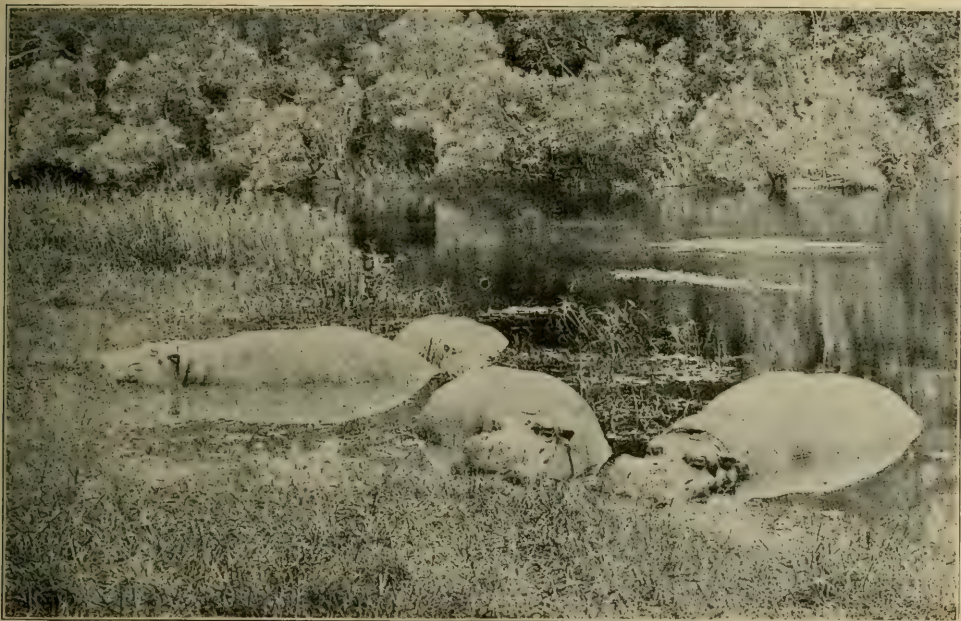


Copyright 1909, by
Underwood & Underwood.

WATERFALL—TANA RIVER DISTRICT.

ing potatoes and European fruits and vegetables, but strongly corraled cattle as well, and it has been prophesied that, with the gradual moulding of the natives into industrious and skilled agriculturists this region and other sections to the Northwest will become great producers of cotton. The frontier

post of British civilization northeast from Nairobi, and the virtual termination of this hunters' paradise, is Fort Hall, on the Tana river, nearly opposite Mount Kenia and about ninety miles from the railroad. It is a supply station for the hunters of the region, an emblem also of British authority, and is the terminus of the telegraphic and telephonic system, which centers at Nairobi. Excluding the African game from the picture and some other features of the landscape, one might well imagine that he was among well-to-do Western farmers of the United States. But as the East African host arises from a



HIPPOPOTAMI BASKING IN THE SUN.

good dinner adapted to English, German or American taste, takes polite leave of My Lady, adjourns to the smoking room, leisurely finishes a Havana, takes his rifle from the walls, hands another to his guest, and then adjourns to the broad veranda to see if any lions, leopards or wildebeests are in sight—it is then quite certain that we are in New Africa.

Wise man that he was, Theodore Roosevelt chose such agreeable and favorable surroundings as these to extend his knowledge of the wild beasts of the world, and enjoy the excitement and the healthful exercise of the chase.

The intimation is not to be conveyed for a moment that he was any parlor hunter. But who would refuse the friendship and hospitality of such men as



Copyright 1909, by Underwood & Underwood.

CURING STRIPS OF ANTELOPE MEAT AFTER A HUNT.

Lieutenant E. W. Jackson, in charge of the British game reserves, and acting governor of the protectorate; of Sir Alfred Pease, whose plantation is near Mackakos and the Athi river, about thirty miles southeast of Nairobi; or of

William N. McMillan, of St. Louis, Missouri, United States of America? The last named, one of the expert hunters of Africa, is proprietor of a plantation of 20,000 acres in the great Athi plains, twenty-two miles east of Nairobi, his vast estate of big game being modestly called Juja Farm. All of these gallant landlords, with their ladies and others, were proud to entertain the ex-President and point his party in the right directions for game, and, of all men, Theodore Roosevelt was the most ready to be thoroughly pleased with their kindness and helpfulness. Mr. McMillan is the special patron (saint) of the American sportsman, and, as one of his guests has put the matter: "At the African home of my American host, all East African game is abundant except rhinoceros and elephant, sable, roan antelope and oryx; but the last are to be had by a journey of from two to five days (to the Mount Kenia region). Hundreds of game animals are nearly always in sight from the veranda of the house. I have lighted a cigarette in my room at daylight, gone forth and killed a big wildebeest bull before the cigarette was consumed. In fact, the 20,000 acres of Juja Farm so swarm with game after the rains that before the dry season is half over the grass is eaten as short as on an overcrowded cattle range; and all from the overflow of the great game reserves north and south of us. Notwithstanding their great numbers, it takes marksmanship to get game on the Athi plains; for they are bare of cover and it is unusual to get a shot at anything except lion or hippopotamus short of from three to six hundred yards." Further east toward and beyond the Tana rivers and around Mount Kenia are to be found the other kinds of game which were hunted and shot by the Roosevelt party—the elephant, during the dry season in the dense mountain thickets and, during the rains, in the bush and long grass country; hippopotami in the rivers in the daytime, or along the banks from dusk to morning; rhinoceros in every unexpected place; antelope generally on the open plains; little dik-dik, leaping through the long grass; leopards everywhere, but as elusive as snakes; reedbuck in the scrub of steep rocky hills; lions prowling wherever their game abounds, seeking especially the zebra and all the equine kind; and the buffalo, in dark swamps and forests, or concealed in high elephant grass. With these descriptions, the reader should be able to form a mind picture of the hunting grounds over which Roosevelt ranged for several months, with the sportsmen and naturalists of his party, under the general and skillful guidance of Mr. Cunninghame. At this point in the narrative it seems desirable to describe, somewhat in detail, the beautiful and surprising gems of landscape to be seen in the Mount Kenia region, the eastern limits of the Roosevelt hunt.

BETWEEN NAIROBI AND FORT HALL.

A good road for carriages, wagons or automobiles—and you see them all—runs from Nairobi, via Fort Hall and Embo, to the wonderful region of which Mount Kenia is the center. Embo is twenty-eight miles from Fort Hall and is the most distant military post which the British have established in that direction. Fort Hall is nearly opposite Mount Kenia, south of the Tana River, and Embo lies to the southeast of that wonderful dome of nature.

The road which takes one to these outposts passes through a varied country, often wild and seamed with gorges in its first stages, but generally fertile and well watered by various tributaries of the Athi and Tana rivers. The spacious colonial estates, or ranches, are scattered along the route for thirty or forty miles from Nairobi. One farm may grow coffee—which is such a luxuriant crop—and on the next estate may be herded together, by a native child or full-grown, a miscellaneous but placid assortment of ostriches, sheep and cattle. A complete dairy farm is liable to be in operation in the vicinity; also a truck garden producing sweet potatoes, Indian corn, beans and other vegetables may adjoin it. At one place is to be found a plucky English family grappling with a ten-thousand acre farm, their neighbor an old Boer, who, after having trekked the length of Africa to avoid the British flag, now stolidly smokes his pipe by his grass house, tends to his small herd of indifferent looking cattle; in his way, is hospitable to his British co-workers, and eager enough to show the tourist what he knows about the whereabouts of lions.

About half a day's safari from Fort Hall, where the Chania and Thika rivers effect a juncture with the main stream of the Tana, is a beautiful meadowy tract within sight and hearing of fine plunging waterfalls, and the locality is one of the favorite camping grounds for lion hunters. It is an agreeable programme, after indulging in the sport the first half of the day, to spend the afternoon in a ride to Fort Hall, through a green, comparatively smooth and pleasant country. There will be found the commissioner's house, with a ditch around it, a jail, an Indian bazaar and a few houses for the militia and police. If the visitor is fortunate, he will arrive while a great gathering of Kikuku chiefs, warriors and women is loudly discussing the dance of the following morning. He will then accept the commissioner's invitation to stay over night. In the



Copyright 1909, by Underwood & Underwood.

WARRIORS, WOMEN, AND CHILDREN, AT FORT HALL WAITING TO GREET THE GREAT AMERICAN,
AND PARADE AND DANCE IN HIS HONOR.

morning, long before daylight, the whole space in front of the fort is packed with almost naked warriors, while the beating of drums, the blowing of horns and the chanting of voices in a crude rhythm fully awakes all would-be sight seers to the coming war dance. And when the "indaba" does begin, later in the morning, it is a sight to be remembered. The pack of plumed, squirming, gyrating, yelling warriors, their hair and chocolate colored bodies smeared with red earth and glistening with the slimy juice of the castor oil plant; legs and arms encircled with twisted wire or heavier iron ornaments; leopard skins waving from their shoulders, and their broad cowhide or rhinoceros shields, painted with tribal emblems, and long spears clashing together, as particular chiefs advance and retreat in the dance, or as gifts of live sheep and bulls are brought forward into the arena—these are the weird features of the exhibition. The laughable side of the picture is the obvious fondness of the African warrior for any European article of clothing, which he proudly parades before his people—an old pair of trousers, a torn jacket, a weather-stained uniform, a ragged umbrella or battered helmet. Mixing such articles as these with their time-honored ostrich plumes, capes of leopard skin, belts of monkey fur and metal anklets and bracelets, is a characteristic but still ludicrous mingling of New and Old Africa.

ON TO THE EXTREME EASTERN POST.

The road to Embo is through a beautiful country well cultivated by the natives, and the thoroughfare itself is maintained by them (under the supervision of the district commissioner) in such good shape that a bicycle could take to it without fear of a puncture. The Tana is crossed by a ferry, which travels along a rope impelled by the current of the river. This convenience is only for such human kind as Colonel Roosevelt and his party; their ponies have to swim the sixty yards of foaming water, reddened by washings from the soil. From the further bank is obtained a noble view of Mount Kenia, gradually rising from its great base to an altitude little short of Kilimanjaro. All along the road smiling, peaceable natives meet the traveler with extended hand—in the other a spear or sword—and the only real danger to be feared is the mad, sudden and unaccountable charge of some hidden buffalo. Embo is at length reached. It consists of a one-story, three-roomed stone house containing quarters for the commissioner and military officer, as well

as a jail; two Indian bazaars built of corrugated iron, and several rows of grass huts for the 150 soldiers and police on duty. Embo stands for the authority which keeps in subjection 75,000 natives, most of them little beyond savagery. Its terrible jail consists of a tiny room, seldom occupied by a prisoner except as a comfortable sleeping place. Now that the native tribes are pacified the soldiers have little to do, while the police are mainly concerned with the enforcement of the game laws. The civil authorities stationed at Embo and Fort Hall have under their eyes the Mount Kenia region, which is wonderful both for its beauties as well as zoological variety.

A BABOON'S PARADISE.

Perhaps the first noteworthy feature of the approach to Mount Kenia is the bright colors of the flowers—blue, yellow, pink and crimson. After a rain the velts are covered with these little beauties, which protest against the general charge that an East African landscape is almost colorless. As the blue-wooded ridges skirting the mountain unfold in detail, the stunted jumper appears and higher still the wild olive grows along the river banks. Still miles away from the actual base of Kenia, approaching from the northwest, the traveler enters a tract which has never been better described than in the following: "The level country is thickly sown for twenty-five miles with great masses of red granite, outcroppings of the same formation. A Celt would say that the devil or the giants had been at war or play in the old days, and that these rocks were the mighty sling-stones they had hurled from the mountains at each other. Some of them are one hundred feet high, some nearer four hundred feet; all are imposing. Round their rocky bases the grass grows so smooth and fresh it might be a carefully tended lawn. Sometimes the dust of the great stones must have added a richness to the soil; and the sward, smooth still, has buried their broad bases for some feet under its carpet. Then the prairie falls away from one, and rises gently towards the next in curves and dips of green. They are half a mile apart, or only fifty yards, as it may be. Some rise sheer and steep with no crack or crevice for bush or vine. On some dwarfed wild fig trees climb and cling. All are of a rich red granite, and the sides and crowns shine and glisten gloriously in the light of the rising and setting sun. In the highest and most inaccessible, great troops of little

gray monkeys have found the safest of hiding-places and of homes. There no climbing serval, cat or leopard can do them harm, and up and down the sheer sides of the cliffs they race and play—they look just like flies walking on the ceiling; not like animals at all.

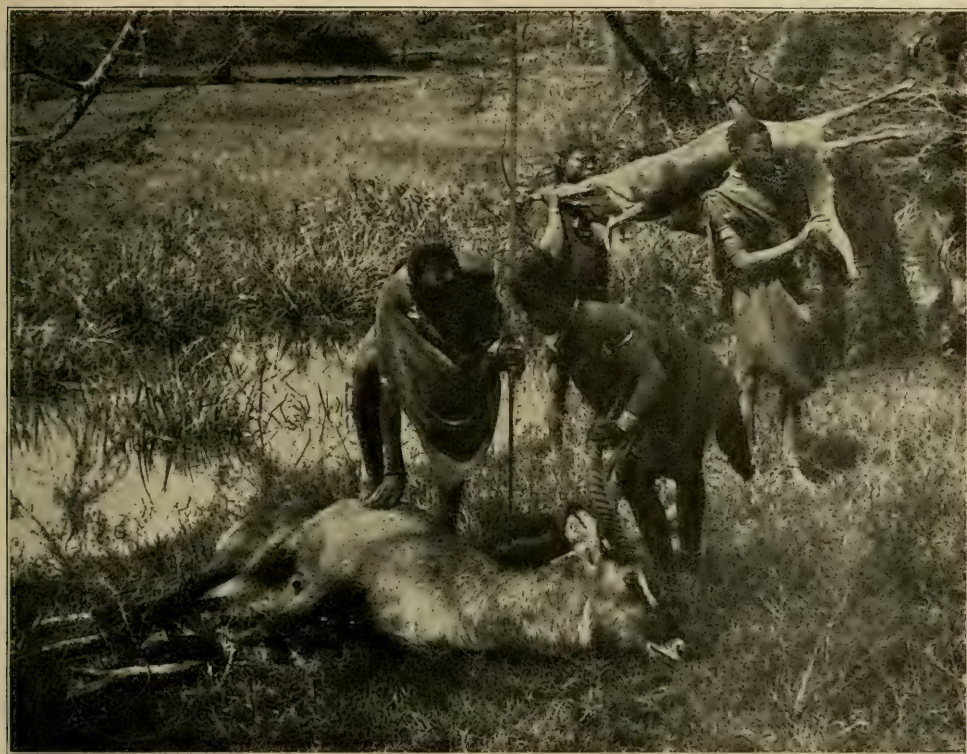
“As I got nearer still to the densely wooded country that lies before me, the masses of rock gradually soften their outline and merge themselves in higher and more regular hills and ridges, always covered with greenery, that rise up and up till they meet the great flanks of Kenia. The sun was now high in the heaven—yet the vapors still clung among these purple-blue foothills. In other lands you see the clouds rise up slowly, steadily from the woodland. Here sometimes they have a way of rising all their own—the breeze bids them be going, but they linger and cling as it were to their home of the night that is over.”

GREAT HUNTING GROUNDS OF LAIKIPIA PLAINS.

The above is from the pen of Dr. W. S. Rainsford, a former New York clergyman, who has tracked and killed big game all over the grounds covered by the Roosevelt expedition, from Mount Elgon, above Lake Victoria Nyanza, to the Mount Kenia region. In one day's approach to that glorious mountain, through various tracts of beauties and surprises, he records a sudden stumbling on two rhinos among the bush; in his circuit to avoid them, running into an ostrich family hidden in a gully; a striking view of seven giraffes twining their necks and feeding among the topmost boughs of a thorn tree; meeting herds of oryx on the plains, and footprints of lions, elephants and antelopes crossing his path in all directions; and the noiseless crawling of a huge crocodile from a river sand bank into the yellow stream. Finally comes a stretch of curving, green meadows pressing up to the mountain forests of Mount Kenia. Dense as these are, with giant bamboo more than sixty feet in height, they have been penetrated to the bare uplands, ten thousand feet above. Herds of elephant and buffalo are common in these almost untrodden mountain solitudes; but the chosen home of the rhinoceros is along the dry and barren slopes of the Guaso Nyiro River, covered with cactus growths.

In these terrible cactus jungles of the Laikipia Plains have occurred some of the most narrow escapes, and also the most awful deaths, of rhinoceros hunters. Further away from the river are favorite grounds

for various kinds of antelope and fairly out on the veldt, between the wooded hills and the plains which stretch to Mount Kenia is found great numbers of the noble African antelope known as the oryx. His special haunt is a few miles up the Guaso Nyiro River, above its junc-



Copyright 1909, by Underwood & Underwood.

HEADWATERS OF GUASO NYIRO—THE HUNTER'S PARADISE.

ture with the Guaso Narak and among the red granite kopjes which rise from the Laikipia Plains. This is a lion country also; and it is no unusual sight to see a dead king of beasts impaled on the long sharp horns of the oryx, which also lies dead beside his victim. Further, the headwaters of the Guaro Nyiro River are said to embrace one of the greatest buffalo grounds in East Africa.

WHERE TO FIND THE COLOBUS MONKEY.

In this secluded region of clear sweet water, great juniper trees, stately ferns and wide-spreading chestnuts, the chattering parrots and monkeys also hold high carnival. This special land of canyons and botanic luxuriance has been selected by the shy and pretty colobus monkey as his own. The region around Kijabe, where the Roosevelt hunters shot their first specimens of this species, is virtually deserted in comparison with the tropical tangles around the headwaters of the Guaso Nyiro. In the early morning the cry of the colobus sounds through these dense woodlands, like the rapid grinding of a coffee mill. There he sits on a high branch of a juniper so as to be well in the sun, drying his fine coat of white and black and his long snowy tail, after his night's sleep in the dewy depths of the woods. It seems a pity to end his little life, even for the sake of the Smithsonian Institution, or in the world-wide interest of natural history.

TRACKING THE BIG GAME.

The true modern hunter finds his greatest excitement in the "chase," however great his satisfaction may be in overtaking the big game and bringing it to earth; and in skilful tracking, although the native's services are usually brought into use, the white hunter is often able to give away points and still beat the black man at the game he has been playing for generations. With all his wonderful keenness of the senses, in which he runs so close a race with the big game itself, the black tracker lacks the general intelligence of the white to draw the correct conclusion from what he sees, hears and smells. But by using the black hunter as his tool, his extra hand, the white sportsman gets a combination which lion, rhino, buffalo, hippo, wildbeest or antelope find hard to beat. This was the union which made the Roosevelt expedition so effective.

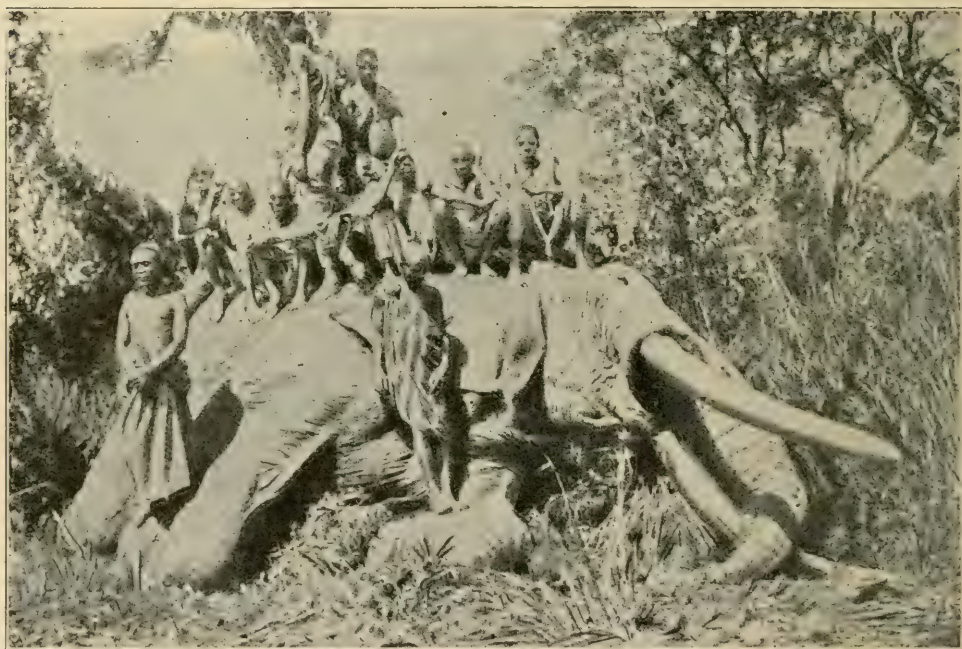
In running down their big game the old hunters in the party, such as Selous and Cunninghame, were able to distinguish the animals from its spoor or track, as readily as the best natives in the party. They had not only seen them in many countries, and on all kinds of soil, but had even studied their forms in dozens of books illustrated with reproduced photographs. Each native could judge only from his limited experience. First, the white hunter realizes that he should learn to distinguish the track of a full-grown bull of any species, as the game laws so jealously

guard the female and her young. Usually the tracks of the female are smaller, while those of the young have an unformed appearance. It is also remembered by the expert that the same spoor will look differently on hard or soft ground, clayey or sandy soil, and according to the action of the animal when he leaves his tracks—whether he is walking, trotting or galloping. If the ground is very gritty, the shallow impress left by the big game is invisible when viewed from above, although it may be seen obliquely several yards away. The hunter governs himself accordingly when he comes across this kind of soil. If the ground is very rocky, no actual track may be visible, but the hunter is then on the lookout for pebbles or stones overturned, exposing the earthy side, with the weather-beaten side down; or vegetation rubbed off the rocks, bruised or even bent. There is another form of spoor occurring on hard, dry soil, sometimes made by a buck, but usually by a lion, rhino and the softer footed animals; that is a slight brushing of the ground with the pad, dislodging a little dust and giving the soil a somewhat lighter color than that surrounding it.

Then there is the grassy country. If the grass is short and green, it is not difficult to trace the progress of the animal by the bruised appearance of the track. The line of drooping blades shows the direction the animal has taken and a little patience will be rewarded by some bare soil with a distinct track. Of all varieties of grass country the most trying for the trackers is that covered by the huge elephant grass, as it is usually trampled in well beaten paths by rhino, buffalo and elephant. As the big game has continually to be followed over such ground, the plan of the hunter is to follow a well-defined run, and whenever a branch path leads away follow it in the hope of discovering some tracks on other spoor which will point to the nature of the game and the comparative time of his passage. Sometimes by lifting the thick layers of dead grass the tender shoots beneath will be found freshly bruised, yielding at least a portion of the information sought.

Returning to the tracks of the big game hunted and killed by Roosevelt and his party, it may be stated in general terms that the spoor of the lion's forefoot, as of all cat-like animals, is rounded and wider than that of the hindfoot. It is larger than that of the leopard, and the track of the male is considerably larger than that of the female. Claw marks do not show unless the animal is about to spring, and then they cut deeply into the ground, tearing up earth and grass.

The tracks of the elephant are considerably larger than those of the rhino and hippo, and, unlike these, hardly show any toe marks, except a faint impress of the two front ones. When stampeding these two toes show a deeper impression, especially in the forefeet. With both elephant and buck the hind track is smaller and more oblong than the fore. The tracks of the rhino and hippo are much the same size, but when seen at all clearly may be readily distinguished; as the former has three broad toes which usually leave a firm impress, while the hippo has four



AN OLD ELEPHANT KILLED NEAR MT. ELGON.

The length of tusks indicate that he was at least 150 years old.

pointed toes with nails. The buffalo leaves a track not unlike that of cattle, but much larger. It is often confused with that of the eland; that is, the track of a full grown bull eland is sometimes hard to distinguish from that of a small buffalo. But buffalo leave a cleaner-cut spoor than the eland's, walk flatter footed and, moreover, leave another mark of their identity which is unmistakable. The droppings of the buffalo not only resemble those of cattle on a large scale, but the second day after they are deposited the maggot of the Mputsi fly appear in the dung.

This fly lays its eggs in no other dung than that of cattle. Another habit of the rhino also tells the hunter that he is not following the hippo, elephant or other big game. The rhino does not scatter his droppings along his route, but after depositing them in one place for a time returns, scatters the pile and scratches earth over it.

Having learned to recognize the tracks of the fore and hind feet of the big game, the next thing to be considered is the manner of placing them while in motion. In the case of the buck, while walking the hind foot is in front of the forefoot; on a jog, on top or slightly behind, and



Copyright 1909, by
Underwood & Underwood.

SKINNING AN ELAND ANTELOPE.

while on a gallop the hoofs are always spread out. The lengths of strides of the different animals at their different paces have also to be learned; and putting various indications together, the hunter will be able to form a tolerably correct conclusion as to the distance he will be obliged to travel before overtaking his game.

Sometimes when all signs of tracks and droppings are insufficient, the browsings of the big beasts leave their tell-tale. Suppose the hunter in a tangled country of elephant grass, such as abounds in the Mount Kenia region, should find his path crossed and recrossed with tracks of

elephants, rhinos, eland and other big game. He is after one kind, not all. His surest plan to get on the track of his particular game is to closely note the browsing indications. A branch torn from a thorn tree, or a bit of chewed thorn dropped on the ground shows that he is in the wake of a rhino, while a long strip of bark torn from the top of a tree would mean elephant. As he walks along the latter is in the habit of gathering young shoots with his trunk and after eating the leaves, throwing little bundles of stalks on either side of the pathway. The eland seems careless and destructive, tearing off great branches from the trees, stripping off the bark and scattering everything right and left. The condition of the browsings left behind also affords the tracker some of his surest indications as to the comparative time which has elapsed since the game was on the ground. The sap at the break of a limb; the bruise on the grass or bush; the rubbings of the buck's horns against the tree; the condition of the droppings—a dozen and one signs will tell the hunter whether he is on a comparatively fresh track. Then, with an intimate knowledge of the habits of the beast—especially his regular times of going to water and his characteristic conduct when he knows that he is stalked—and the hunter will eventually run down his game. The next desideratum is to keep cool, and patiently wait for an opportunity to get in the vital shot.

THE PROMISING DEATH SHOTS.

All big game hunters now agree that the brain shot is the proper one for the elephant. But it is not often attempted, from the fact that the brain is very small in comparison with the bony structure around it. When the sportsman accurately knows the position of the brain—that it is fairly low and well back—he takes the ear orifice and the eye as indexes of the general line of his shot. If he gets a broadside position, he aims for a spot about two inches forward of the ear hole in a line with the eye. A direct frontal shot is avoided as too uncertain. A bullet at the back of the ear, when the elephant's head is turned away from the hunter is usually deadly. The deadliest shot, however, is considered the raking one, by which the bullet is placed at the back of the neck. The heart lies on the right side of the body; but neither the heart nor the lung shot is to be compared with the brain shot. In fact, unless both lungs are pierced the elephant often gets away.

The most deadly shot for the rhino is also that in the brain, with a bullet placed in the center of the neck as a good second. In following a wounded rhino he is always found with head high up, waiting for a charge, in which case a raking shot through the shoulder generally sounds his death knell. As the hippo is generally found in the water, shots at the head must be the rule; and his most certain death is to be encompassed by taking him when his head is turned away and planting the bullet on an imaginary line drawn across the base of his ears. In



Copyright 1909, by
Underwood & Underwood.

TROPHIES OF THE HUNT.

the case of buffalo—one of the hardest to kill in the list and among the dangerous when wounded—there is no more vital point to endeavor to reach than the point of the shoulder if the beast is broadside; if facing, with head up, the base of the neck; if quarter facing, the side of the neck, so the bullet will rake through the body to the opposite shoulder. The dum-dum, expanding bullet is nearly always used for this ferocious brute. But, taken all into consideration, the lion is really the most dangerous of the big game, as in proportion to the number killed he has caused

the greatest fatality among hunters. Particular care is therefore exercised in waiting for the opportunity to drive home the most fatal shot. The point of the shoulder and the base of the neck are the localities to be aimed for. Most of the fatal accidents have occurred when following a wounded lion into grass. As to buck, the best spot to aim at is the shoulder, for if the heart is not struck the lungs may be, or the arteries around the heart damaged, or the shoulders so shattered that the animal will be unable to run. If facing, the hunter generally tries for the base of the neck, so that the bullet will rake the vital organs from front to rear. Some of the buck are the most difficult to kill in the whole animal kingdom, not only getting away with perforated lungs and shattered limbs, but with their very entrails dragging on the ground. The first shot is therefore the all-important one—in the case of the bigger game because the life of the hunter may depend upon it, and of such as the buck, because the game may escape the hunter.

CHARMS OF THE LION CHASE.

First, see your lion. The charms of the lion chase consist largely in pitting human wit against animal instinct, and getting the beast in such a position that he must either stand or run. With all the uncertainties of his conduct, the general policy of the lion is to mind his own business and especially to avoid trouble with man. Still, he sustains his reputation of being the most wise and uncertain of the big carnivora. He will even go so far as to retire meekly from a freshly killed buffalo or zebra upon the approach of the hunter; but if the sportsman be persistent, and the beast makes a stand, it means a fight to the death. But often a hunter may search for days without even getting a sight of His Majesty, even though his spoor may be fresh and his killings on all sides. One expert states that during his six months in British East Africa he spent thirty days looking for lions in a country where they were thick about his camp every night, often seeking entry to the tents, and twice making kills within a few yards of where the safari slept.

It is generally considered that the safest lion shooting is on foot and the most favorable ground a naked plain. As was the rule in the Roosevelt hunts, a pony man runs the lion to bay and the chief approaches afoot from another direction. Under such circumstances the lion invariably charges at the pony man—first, because he likes horseflesh and,

secondly, (perhaps) because he holds the latter responsible for being brought to bay. And when once shot, if the wound is not through heart or brain, the beast advances, increasing its pace with the reception of each additional bullet. The last thirty or forty yards is covered like a whirlwind—the swiftest thing on earth—and the momentum sometimes carries the great brute right to the feet of the hunter with a bullet through the heart.

BLIND CHARGE OF THE BLACK RHINOCEROS.

On at least two different occasions Mr. Roosevelt dropped his lion as the beast was making one of its whirlwind charges, and upon one occasion saved the life of his pony man. He also experienced the almost equally terrific charge of the black rhinoceros—about as resistless, but shorn of some of its dangers from the fact that the rhino's sight is so bad; his charge is therefore literally blind. He gets the "tainted air" of some human "vermin" and forthwith lowers his ugly head and horns and charges in the direction of the obnoxious thing, whether it be a hunter's safari, a body of Masai warriors or a company of the King's African Rifles. Everything and everybody scatters before the awful brute, who blunders through the wreck, right on, seldom returning to the same attack. The rhinoceros loves to lurk in dark jungles, or forests, and no other of the big beasts is so given to charging with less provocation than he; among them all he seems the most "possessed of the devil." The white rhinoceros is a most rare animal, as compared with his black brother of East Africa, and few of this species have been shot within recent years. One of the lucky hunters to bring a white rhino to his game bag was Captain Richard Dawson, of the British Coldstream Guards, who made the shooting in July, 1909, in the Sotik district, northwest of Kijabe, where the Roosevelt party was operating at the same time, hoping especially for similar good fortune.

TERRIFIC ONSLAUGHT OF THE BUFFALO.

As the rhino's sense of smell is remarkably acute, so is the buffalo's sense of hearing, as well as his eyesight. He selects more awful places in which to hide and quietly listen than does the rhino to dilate his nostrils for "tainted air." He hides in great papyrus swamps, jungles of elephant grass or dense forests. The lone bull buffalo is a terrible animal and often charges without provocation, and will often hunt the

hunter, coming upon him unawares and tossing him into eternity. A wounded buffalo has a nasty trick of appearing to run away as if panic-stricken; then, after dashing away for a mile or so, well out of sight, circling round and returning to the trail. Then hiding in the high grass or forest, he patiently awaits the coming of the hunter in the hope of charging him unawares. As his vitality equals his cunning, and both are backed by an awful strength, the buffalo is considered, next to the lion, the most dangerous of the big beasts.

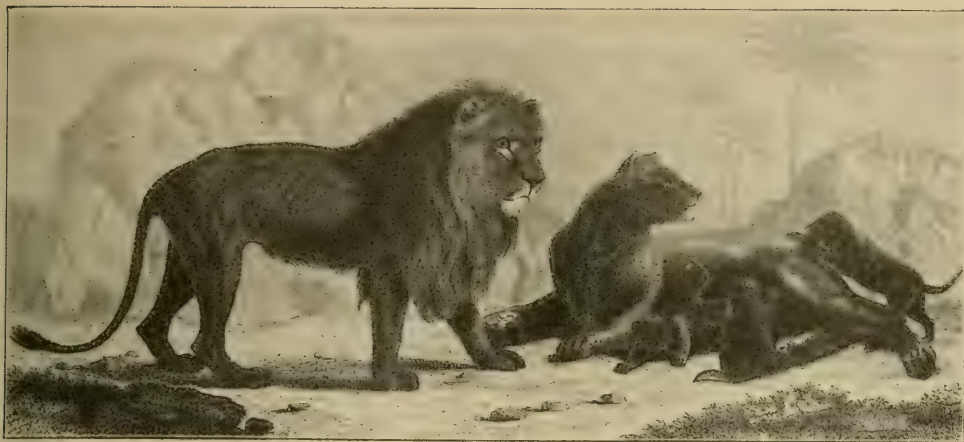
SABLE ANTELOPE.

The sable antelope is mentioned here because, albeit not of large size among his kind, he is one of the most dangerous. He has long spear-like horns and is usually hunted with a pack of dogs. A herd of sable antelope when finally brought to bay is certainly a noble sight, and after the first encounter their pursuers are careful indeed of the distance they keep between their bodies and those death-dealing horns. In spite of their nimbleness more than one good dog is usually impaled in a hunt, and the sportsman himself has even met death by coming in too close. The sable antelope is smaller than the roan and his coloring is different, though the shape of the body is quite similar in the two species.

HARTBEESTS AND GNUS (WILDBEESTS).

Perhaps of all the soft-skinned beasts of big caliber in Africa the hartbeests and gnus are the hardest to kill. The wildebeests are not so difficult to stalk, but their vitality and staying qualities are something phenomenal. When sound they will invariably outrun a horse, and even when shot through the lungs they have been known to gallop out of sight.

The hartbeests are a species of antelope named "hard beasts" by the Dutch, who had the first long experience with them in South Africa. The British often varied their christening by calling them "nasty beasts"; and all because the creatures posted their sentries in such a wonderful manner that it was almost impossible to get within fair shooting distance of a herd. The three varieties common to British East Africa are Jackson's, Coke's and Neumann's. They are all of a rich fawn color of varied shades and also vary somewhat in the shape and size of the horns, Jackson's hartbeest carrying the heaviest and longest.



NEW AFRICA.

IN BLACK AND WHITE.

Having left the Roosevelt expedition in the hunters' paradise of British East Africa, it seems a fitting opportunity to briefly retrace the route taken by the Uganda railroad, which is virtually fixing New Africa on the map of the world, and first describe the country through which it passes in "black." The tribes of colored men seem now reconciled to the new order of things and are no longer to be considered as dense savages, but as considerably more than semi-civilized.

THE WANYIKA.

A few miles out from Mombasa commence the little villages of the Wanyika—sometimes not more than a small collection of huts, surrounded by a high fence of trees, vines or thorny shrubbery. Such defenses are partly a remnant of the days when they were subject to the attacks of the fierce Masai warriors or the equally merciless slave hunters; but they are still necessary as protections against lions and other flesh eaters. They raise vegetables and fruits on small tracts of land, or occasionally act as cattle herders, and are scattered with camps of railroad employes or squads of irregular infantry nearly to the Athi plains. Their appearance bespeaks considerable Arabian blood.

MURDER OF THOMAS LONDON.

Although generally peaceable, the Wanyika sometimes allow their avarice to overcome their scruples and caution; and perhaps this should not be charged up to them as a conclusive evidence of their savagery. Perhaps their latest crime against the human life of a white was the murder of Thomas London, a British hunter in the region not far from the coast. Being hungry and thirsty, he approached a village and paid a native boy a silver dollar for a cocoanut. Such a large sum for so small a favor aroused the cupidity of an old chief, Makelinga, and when Mr. London had laid aside his gun and was bending over to wash his hands, the native leader, with three confederates, sprung upon him and stabbed him to death. Only five dollars were found upon the dead; but the murderers were tried and convicted at Mombasa and hung on the scene of their crime, August 28, 1908.

THE WAKAMBA, OF THE ATHI BASIN.

The Wakamba have the distinction of being not only the largest tribe of East Africa, but the only one which has never acknowledged permanent defeat at the hands of the Masai. They are both farmers and herdsmen. Like most African tribes they are very superstitious, having their hoodoos against witchery and their official witch doctors, who are sometimes more powerful than the chiefs. After harvest the doctor always makes his rounds of the villages, receives gifts and endeavors to "smell out" the witch in each community who has been responsible for the sudden deaths and other misfortunes of the year. When she (for it is generally a woman) has been located the villagers gradually desert her, leaving behind only one grim warrior, who, at the first favorable opportunity, pins her to the ground with his spear and leaves her to a death of keen agony or slow torture. In case her death struggles are too prolonged, the villagers return and stone her to death. A village near Machakos station seems to have been a favorite location for enforcing "Kinyolla," as this hideous custom is known, some forty women having met their fate there within a year.

THE MASAI, WITH CLAWS CUT.

The once warlike Masai, not unlike the Sioux of the United States in their heyday, are now virtually pacified and kept within the bounds of their reservation on the Laikipia plateau, northwest of Mount Kenia and northeast of

Nakuru. Once as much hunters of men as of lions and other wild beasts, they were for years the terror of all the native tribes of northeast Africa between Lake Victoria Nyanza and the Red Sea, excepting perhaps the powerful Wakamba already mentioned. They were loosely confined within these western and eastern bounds by the Uganda confederation of tribes and by the Somali warriors. Years ago they were almost a nomadic race, like the Sioux of North America or the Huns of the old world, sweeping the country with their wild forays of rapine and destruction. They took their cattle with them,



Copyright 1909, by Underwood & Underwood.

MASAI WIVES BUILDING A NEW VILLAGE.

and it was the wholesale destruction of their herds by plague which caused many of them to establish villages and form a distinct division of the tribe. Then until they abandoned the warpath within recent years, at the "suggestion" of the British authorities, the Masai were generally divided into warriors—splendid specimens of chocolate colored young manhood, never less than six feet in height—and those who had served their time at feats of arms and had settled down to married and domestic life. The warriors, or free-



Copyright 1909, by Underwood & Underwood.

GOING FOR HIS BRIDE. RIDING THE COW THAT IS TO PAY FOR HER.

men, lived in camps, while the more staid populace dwelt in the villages, herded the cattle and raised grain and vegetables. At the age of puberty the youth of proper physique was set apart as a warrior by the rite of circumcision and not only thoroughly drilled by veterans in the use of the long-

bladed assagai, the short sword and club and the oval shield of buffalo hide, but was placed on a strict diet, alternating between meat and milk. The young men were attended by unmarried girls and women, who did the cooking and performed all necessary domestic offices.

READY FOR THE WAR PATH.

When the young man, or "el Moran," was ready for the war path he was certainly a sight calculated to inspire fear. Gorged with blood and meat, to raise his animal passions to the utmost, his oblique eyes blazed from his chocolate colored face, encircled by ostrich feathers, which were carried above his frizzy hair in the form of an oval headdress, so increasing his natural height as to make him appear gigantic in stature. His shoulder cape was of vulture feathers, and his belt and anklets were made from the fur of the Colobus monkey. When, therefore, he leaped along the war path, with his long lance tipped with thirty inches of keen steel, his feathers ruffling around him like an enraged bird of prey, it is not singular that he struck such terror into the heart of a savage foe as to half win the battle before it was even begun. In the days when the Masai were in their prime as warriors, no young man dare return to his camp without human blood on his spear, or booty to appeal to the admiration and affection of his sweetheart. Once married, he settled down in one of the villages and was allowed to vary his diet with vegetables.

As the cow is the main food supply of the Masai, it is necessary that the young warrior who is about to turn Benedict should present his prospective father-in-law with a first-class animal; both as an earnest of his honorable intentions and as actual pay for his bride. His journey to the home of his fair one is usually made on the back of his sleek gift, the young suitor being accompanied by a body-guard of friends.

THE MASAI OF TODAY.

The young Masai, though he may no more go forth to slay his brother, is in demand by the white hunter as a helper or guide, and he also maintains his old-time reputation as one of the bravest sportsmen in the world who has ever faced the lion. When he now returns single handed, with his spear dipped in the life-blood of the king of beasts, the whole village turns out to give him a deserved ovation.

The Masai villages are still built in the form of a circle, surrounded by a strong thorn fence, and the cattle are carefully herded within. The huts are made of bent boughs and the roofs plastered with cow dung. Although the



Copyright 1909, by Underwood & Underwood.

YOUNG MAN HONORED FOR KILLING A LION.

dressess of the men and women are in the transformatory period, they generally retain their old-time characteristics. The women wear a profusion of string beads and anklets of iron and brass, with a small apronlike garment in front

of the body and a longer garment behind. The men, not in military costume, wear an upper garment of tanned skin, and a length of cloth fastened at the neck and hanging down behind. Their armlets are of ivory and horn; they wear ornaments of slender iron chain, showing good workmanship, and their



Copyright 1909 by
Underwood & Underwood.

PLAYING DAO.

hair is usually gathered in a chignon which hangs between the shoulders. Their ear-lobes are distended with ornaments, for, like other semi-civilized tribes, they are loaded with the bulk of attractive things for the edification of the opposite sex. In that particular they follow the usual order of birds and animals, among which it is the male who is aflame with color and is loaded

with the noticeable adornments. They seem to have few amusements, but, like many other African tribes, are partial to games of chance, or gambling. Bao, as their most popular gambling game is called, is represented in full swing in the accompanying illustration.

Generally speaking the Masai of today are dignified and self-contained, capable agriculturists and herdsmen, quick witted and possessed of considerable oratorical ability. They are a mixed Ethiopian and negro race, those in whom the former blood predominates having good features—so good, in fact, that, barring their chocolate color, they would pass for Europeans. Their general appearance, bravery and adaptability to military discipline are so much in their favor that many of them have been incorporated into the King's African Rifles and are employed with good effect in the British work of "pacification." With the Swahili, the Masai have given names to the animals of British East Africa.

THE SWAHILI AND KIKUKU.

The Swahili are perhaps the most polished and sedate of any of the native tribes of Central and East Africa. They are noted traders, are Mohammedans and, in their flowing white garments, much resemble the Arabs. They number fully a million souls and have their pretty villages and bazaars as far east as Mount Kenia.

It is said that the Kikuyu, between Nairobi and Mount Kenia, number some 300,000 souls, and, although they have made as much progress as any native tribe in agriculture, they are considered unreliable as citizens and the protectorate police are obliged to keep a keen eye out for them. Further to the west and north, from the Mau escarpment to the Laikipia Plains and beyond are the villages and huts of the Wandorobo, scattered along the Tana and its tributaries and hidden in the depths of the forests. They are among the oldest professional black hunters in Africa and will be exterminated before they become farmers. They are exceedingly primitive and live mostly on game and honey.

NAKED TRIBES NEAR VICTORIA NYANZA.

The country from Kibigori station to Kavirondo Gulf (the eastern arm of Lake Victoria Nyanza) was inhabited by tribes who, notwithstanding the present-day influences of several years, might still have just emerged from the Garden of Eden—many even minus the proverbial fig-leaf. The females load themselves with bead necklaces and other

ornaments, and the men delight in elaborate head-dresses, made of feathers and banded with ivory. They are laughing, merry people, live in villages surrounded with aloe hedges, and usually surround the traveler with curious looks and gestures, quite unconscious of their condition. Physically, they are bronze models for the artist and sculptor—tall, symmetrically developed, gentle-mannered, peaceable, and, from the most reliable accounts of European travelers, are chaste and moral. Of course, the efforts of the new civilization has resulted in some clothing of the naked, albeit the majority still cling closely to the instinct of their forefathers in the matter of dress, or no-dress. Apropos of dress reform among the Kavirondo—the story is told on a good English lady who, having been shocked at the sights she saw, stopped at Port Florence, the terminus of the railroad, long enough to purchase a huge bundle of cloth of home manufacture. This she sent down to Kibigori for the purpose of being distributed among her dusky sisters; but what was her disgust, on her return from a short stay at Entebbe, to find that the aforesaid sisters had passed all the goods over to their husbands and lovers, who were all adorned with beautiful fresh turbans.

THE NANDI TRIBE.

North of the Kavirondo was the Nandi tribe. It is an offshoot of the Masai and, like the parent stock, its members are cattle fanciers and warriors. On scenting danger from hostile tribes, or British soldiers, it was their custom to make off into the forests and rocky gorges marked by the Nandi escarpment, and securely hide their flocks and herds before venturing forth themselves. Even then they did not come into the open, but after they had posted their sentries on every commanding hilltop in the country, and learned from the answering shouts the position and strength of the enemy, they were ready to commence their ambushed warfare with poisoned arrows. They gave the builders of the Uganda road some trouble; but more as thieves than as warriors. When they first set eyes on the fine metal used in the tracks and telegraph, the savage love for ornamentation overcame all other desires—even the desire to avenge the coming of the white man. For months the progress and operation of the line toward the lake were seriously impeded by their thefts of telegraph wire for bracelets and earrings and railroad bolts for fancy spear heads.

Much of the history of the Nandi and Kavirondo tribes is written in the past tense, as they are among the unfortunate people who are victims of the Sleeping Sickness, which has killed two hundred thousand people in the regions tributary to Lake Victoria Nyanza; and as no cure has yet been found for the terrible plague the order has gone forth that all tribes inhabiting the infested area shall be removed back into a safe country. The Sleeping Sickness had been especially destructive to the Kavirondo, as the tsetse fly, which produced it, had free access to their naked bodies.

NATIVE KINGDOM OF UGANDA.

One of the chief objects in building the Uganda Railroad was to tap the rich native kingdom of Uganda west of Lake Victoria Nyanza. It is a well organized state, composed of a union of the most intelligent and progressive of the Baganda tribes. They have well been termed the Japanese of Africa, as they possess a wonderful power of absorbing and practically applying the knowledge derived from European contact. Even before Cameron and Stanley came among them, rumors had reached the outside world of a far-advanced native confederation holding the country between lakes Victoria and Albert Nyanza. But it was not until its last autocratic King was banished by the British and a protectorate assumed that the state was organized along modern lines, although the Catholic and Episcopal missionaries had planted many seeds which had borne good fruit. The territory is now divided into twenty counties, each county ruled by a chief, and the entire state is governed by King Daudi Chwa, who, as he is only about thirteen years of age, is under the guardianship of three regents. The native parliament consists of the regents and county chiefs named, sixty Notables (three from each county) and six Persons of Importance, all appointed by the King and subject to the veto of the British government. Besides the establishment of a virtually modern monarchy, Uganda has also made a great advance toward modern standards in the abolishment of the most objectionable features of polygamy—such as the selling of women for wives.

Physically, Uganda is a land of beauties—gorgeous landscape effects, highly colored birds, enormous moths and butterflies and tropical luxuriance of vegetation. The soil is wonderfully rich. The country is simply unctuous with bananas. Cotton grows everywhere, and other

products, either native or introduced, are cocoa, coffee, tea, oranges, pineapples, lemons, rubber, hemp, vanilla and cinnamon. More wonderful still, most of the fruits and vegetables of the temperate zone thrive well. Is it wonderful that the British wanted to get into railroad connection with such a country?

It is one of the sad and most dramatic features of modern history that this wonderful country—this intelligent people, so eager for knowledge and so capable of absorbing and profiting by it—should be devastated by the mysterious plague of the Sleeping Sickness. The efforts of modern scientists and philanthropists to discover its causes, eradicate it and save Uganda itself from extermination are noted at the last of this chapter.

WHITE BELT.

The White Belt of British East Africa comprises the country north of the Uganda Railroad from Kapiti Plains (or perhaps Nairobi) to Port Florence, for an average of forty miles inland, wherein is studded most of the plantations, stock farms and private hunting grounds of British, German, Boer and American proprietors—many of them settlers. There are those who assert that, on account of the remoteness of the producing territory and South American competition, coffee will never be a profitable crop, although so readily raised from the soil—the same objections applying to fruits and vegetables, especially potatoes. It is naturally a fine live-stock country; but the fever tick has been imported from German East Africa and has made such inroads among the cattle as to discourage many live-stock raisers. The native cattle are usually black and white, and small compared with the English species. If left to themselves and the devices of the native African they would undoubtedly perish under the attacks of the fever-spreading tick; but new and vigorous blood is being introduced into the native herds from European sources, and the white scientist has discovered that by wiring a herd of sheep in a tick-infested area the insects are soon exterminated. Their bites are harmless to sheep, which also eat the insects without loss of appetite or health. So that the live-stock industries of British East Africa may eventually flourish exceedingly; but a majority of the prophets seem to vote in favor of King Cotton as the coming monarch of the soil, pointing to the fact that both in the lowlands and uplands it has been grown with success.

Within the White Belt of British East Africa no class of actual settlers are showing more adaptability and rugged determination to wring substantial results from the old, dormant country than the Boers, many of whom had planted themselves in the soil before the British protectorate was even dreamed of. Some of the richest lands along the railroad lie around beautiful Lake Nakuru, where the line makes its first decided turn to the westward on its way to Lake Victoria Nyanza. At this locality is one of the largest and most prosperous Boer colonies in East Africa, most of the settlers being housed in the typical corrugated iron buildings, which are not pretty to look at, but are both light, strong, cool and weather-proof. As the altitude here is more than seven thousand feet above sea level, it is not always heat alone against which the householders need protection.

GREAT SCENIC SECTION OF RAILWAY.

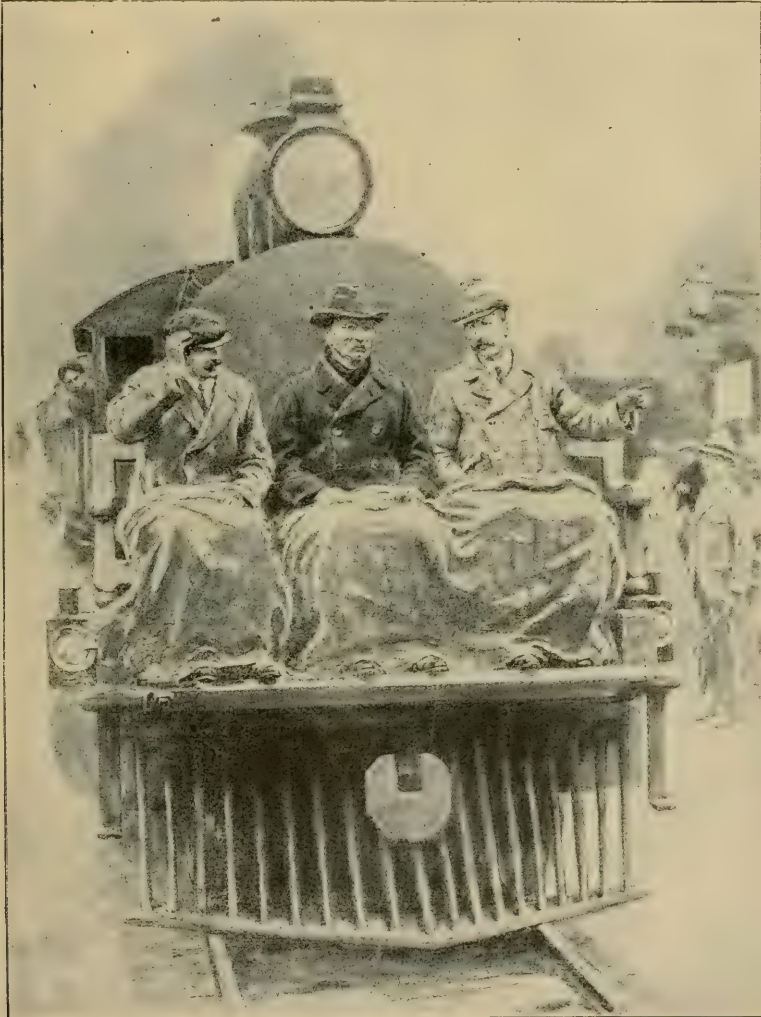
The great scenic section of the Uganda Railroad is from Nairobi to Nakuru, during which the country rapidly rises through a series of alternating escarpments and valleys to an altitude of nearly eight thousand feet at the Mau Escarpment beyond the latter station. During the first twenty-four miles out of Nairobi the rise is some two thousand feet. To the west of Nairobi, at the foot of the Kikuyu hills, the plain country abruptly ends. As far as the eye can see extends a frowning wall of forest-clad rocks, and when the train has struggled to high ground, now six thousand feet above the sea, it shows the tourist one of the most impressive sights in East Africa.

ESCARPMENT STATION AND RIFT VALLEY.

From Escarpment Station the railroad pitches and zigzags its way into Rift Valley, fifteen hundred feet below, its broad expanses being broken by strange volcanic formations. Some of the shattered craters in the valley are not inactive, and one slumbering volcano is planted in the middle of Lake Naivasha. To the west the valley is barricaded by the lofty Mau hills and cliffs, which collectively form the escarpment which bends toward the northwest and crosses the railroad beyond Nakuru. Before the days of the railroad the traveler was lowered over the escarpment into the valley below, or elevated from the valley to the heights—as the case might be—by an old rope lift.

ON TO KIJABE STATION.

Kijabe, which is the next station beyond Escarpment, is well named "The Wind," as it is one of the bleakest places along the road. One of the most interesting expeditions from Nairobi was that made by the ex-President and his party to Kijabe, a station on the railroad forty-



ROOSEVELT, MAJOR MEARNS AND THE TRAFFIC MANAGER VIEWING THE COUNTRY ALONG
THE UGANDA RAILWAY.

four miles northwest of the city, which is the headquarters of the African Inland Mission. It is an independent American organization, with home councils in Philadelphia and London, and several schools are conducted at Kijabe for the education of missionaries' children and the industrial training of the natives.

The party, which consisted of Mr. Roosevelt, Edmund Heller, Major Mearns and Kermit Roosevelt, arrived at their destination on the afternoon of June 3rd, the Colonel, the Major and the traffic manager riding about half the way on the cow-catcher so as to obtain the full benefit of the glorious scenery in the Rift Valley. They were met at the station by the porters and the American missionaries, and passed the night in tents near the railroad. The next morning the party spent some time shooting Colobus and green-faced monkeys, as well as rare birds. In the forenoon Mr. Roosevelt made a thorough inspection of the mission, and afterward had luncheon with forty of the missionaries and their wives and settlers in the country.

LOVELY AND MYSTERIOUS LAKE NAIVASHA.

One of the greatest wonders and beauties of the Rift Valley is Lake Naivasha, about an hour's ride from the Escarpment Station. This sheet of water is about ten miles square, and the rim of a submerged crater makes a crescent-shaped island in its midst. Although its waters are rather brackish they are always sunny and glisten like a "Tear" in the rather somber landscape; and it should be added that "Naivasha" translated into English is a "Tear." "Almost always," says one who looked upon the scene with a bright eye, "there is a smile of sunshine on her waters, while on the other hand there is as often a black frown of thunder clouds rolling over the Mau and a white cap of rain on the peak of Longonot"—the latter being a rather portentous looking volcano which almost closes the further end of the Rift Valley. But though the water of Lake Naivasha is by no means sweet, its bosom is covered with pink, white and blue lilies, and is fringed with sedges, seeds and papyrus. It is also the home of myriads of Egyptian geese, cranes, herons, ducks and snipe. The borders of the lake and the islands scattered over it are especially favored breeding grounds for herons, who love to feed among the herds of native cattle pasturing on the grassy slopes which roll away from Naivasha toward Nakuru. Hippos abound in the lake, but there are no crocodiles; and toward the northwest is big game of

all kinds, as well as a fine region for bush buck, while on the wide grassy flats and the lower slopes of the hills are great flocks of sheep and goats, herded by the natives.

GOVERNMENT BREEDING FARM NEAR NAIVASHA.

At the government breeding farm, a few miles from Lake Naivasha, efforts are being made to cross the zebra with the horse or mule, in order to produce a hybrid which may both resist the diseases of the country and at the same time be easily tamed and be valuable as a beast of burden. This attempt to solve the horse problem in British East Africa has not met with as much success as the government's efforts to improve the native hairy sheep and the humped African ox. The former has been so crossed with Sussex and Australian blood as to be transformed into a very respectable wool-bearing animal, while the native hump is disappearing, and the mixed ox is coming on the scene as a fair Shorthorn.

NAKURU AND ITS CHARMING LAKE.

Salty though it is to the taste, as are most of the bodies of water in this region, Lake Nakuru is charming both in the vegetable and animal life which it supports. A rich grass country surrounds it, which, as stated, is thickly settled by Boer farmers. Beyond, along the Mau Escarpment, is one of the finest pieces of railroad engineering in East Africa, consisting of nearly three miles of viaducts, or twenty-seven separate iron bridges spanning beautiful valleys and foaming torrents. The really interesting part of the great engineering feat lies in the fact that it is really an American achievement—a demonstration of American ingenuity, pluck and technical skill.

FROM FORT TERNAN TO PORT FLORENCE.

At the station called Fort Ternan the railroad has fairly cut through the Mau Escarpment, and thence to Port Florence, or Kisumu (the native village), carries one through a swampy but fertile country—the approach to Lake Victoria Nyanza and the region infested by the tsetse fly and devastated by the Sleeping Sickness; the country of the Nandi and the Kavirondo. Fort Ternan, which has been dubbed a “placeless

name," is about forty miles from the terminus of the road and some thousand feet above it. This section of the line taps a level country of brilliant green dotted with small parks of flourishing trees.

APPROACH TO LAKE—PORT FLORENCE.

Realizing that Lake Victoria Nyanza is the greatest of the African lakes and, next to Lake Superior, in the United States, the largest body of fresh water in the world, Mr. Roosevelt shared the common disappointment of all travelers who approach it from the east for the first



time. The country is so flat around Gulf Kavirondo that all that can be seen is an unimpressive arm of dirty brown water thrust out into the landscape—no vast expanse of blue waters stretching to the horizon, with appropriate settings of rocky cliffs or smiling shores. But the train soon runs onto the pier at Port Florence, which is little more than a transfer station from the railroad to the steamers which ply across the

lake to Entebbe, the capital of the Uganda protectorate, and to other interesting points in the native kingdom. It has also a large dockyard, at which all the lake steamers are built and repaired, and the resident part of the modern town contains trim houses, well shaded and backed up against the hills which overlook the gulf at this point.

BIG HUNTING GROUNDS TO THE NORTH.

Before crossing the lake to Entebbe, the sportsman always samples the noted grounds for big game, lying between the Nandi escarpment and Mount Elgon, especially along the Nzoia River and along the southern slopes of the mountain mentioned. It is an especially fine lion country. All through the lower Nzoia country, in the comparatively level stretches of sward, are great ant-hills interspersed with clumps of thorn bushes. The ant-hills form good points of observation for the hunter and the thorn bushes fine screens. The lions also like to mount these towers and survey the country for game, or, if they are tracked, to discover the progress and position of their pursuers. This ant-hill country is favorable, it seems, both for lion and lion hunter, when the sportsman is afoot; but it is obviously no place for horsemen. When following the animal into cover, the hunter should, if possible, determine whether he is after a lion, or lioness with cubs. During May, June and July they run together in mixed bands, which is a favorable season for hunting them; during the other months the females withdraw from the males and bear their litters. The months between July and May may therefore be called the dangerous months for the sportsmen. Besides the lion, the whole country from the Nandi hills to and along the Nzoia River abounds in buffalo, eland, roan antelopes, giraffes, Jackson's hartbeests and water and reed buck. Better still, from the railroad to the Yala River may generally be found several herds of elephants, one seeming especially to haunt the locality near Kibigori station; but the great grounds of the monster game are east and southeast of Mount Elgon.

ACROSS THE LAKE TO ENTEBBE.

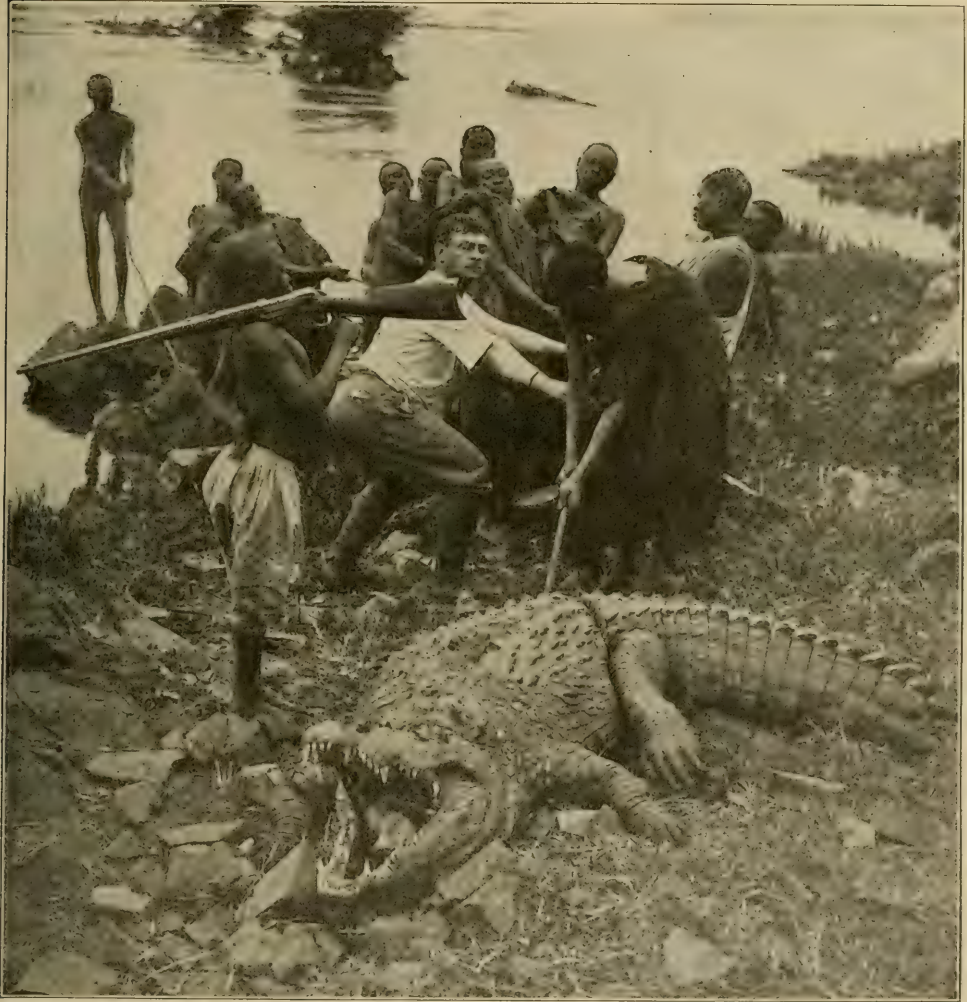
Entebbe, across the lake from Port Florence, is the administrative capital of the Uganda protectorate and is connected with Kampala, the native capital, by a well constructed twenty-five-mile road (not rail-

road). There is another fine pike from Kampala to Lake Albert Nyanza; and the entire distance of two hundred miles may be comfortably covered in an automobile. Entebbe itself was carefully planned and built. It has such a charming location, surroundings and accommodations for the visitor that many are suggesting that the literal translation, "The Chair," should be rendered more freely "The Easy Chair." The houses are mostly brick, with corrugated iron roofs of red, and the official residences are surrounded by large gardens, connected by broad avenues. Flowering trees are planted along the streets, and many of the gigantic forest trees have been left where they originally stood. As to club and social life it is a repetition of Nairobi, plus a beautiful site. The shores of the lake, and the islands with which it is studded, are ablaze with the brilliant colors of plant and bird, and the air laden with tropical perfumes and the myriad noises of insect, monkey and the feathered tribe. The slopes between the town and the lake have been converted into a fine botanic garden, which is a condensed exhibition of the plant and animal life around.

THE SLEEPING SICKNESS.

Eight years ago this beautiful region of islands and tropical forests, of fertile land and teeming vegetation, was densely populated by industrious and progressive natives—tilling the soil, herding cattle and learning to be good citizens, according to their lights. Since they have been swept away in great waves of death by the Sleeping Sickness, and one of the most interesting institutions of Entebbe is the laboratory of the Royal Commission on Sleeping Sickness, where experiments are conducted in the hope of getting at the cause and remedies of the terrible disease. At one time four thousand incurables were slowly dying in Uganda hospitals, and thousands more expecting to take their places. Up to the present time, however, only a few Europeans have died of the malady, one of the unfortunates being Lieutenant Tulloch, who contracted the disease while making the initial experiments at the laboratory and died shortly after his return to England in the summer of 1906. The only deaths in the railroad districts east of the Mau ranges have been of Uganda natives who have contracted the disease at home, and it has never advanced beyond Mount Kenia to the east or Mount Kilimanjaro to the south.

Sleeping Sickness has been known in Africa for more than a century, but its connection with the tsetse fly was not recognized until 1902. The infection, or organisms known as trypanosomes, is conveyed by this insect in some manner not yet clearly ascertained. The incubation period is about three weeks. Then comes an irregular fever, ranging



Copyright 1909 by Underwood & Underwood

CROCODILE CAUGHT ON THE SHORE OF LAKE VICTORIA NYANZA

Natives live in terror of Crocodiles and kill them whenever they can. In some tribes no young man is considered a real warrior until he has speared a Crocodile. Then all the belles of the tribe worship him.

from a few days to weeks, with progressive weakness, swelling of the glands, affections of the skin, and final paralysis of the entire nervous system. There may be an interval of years—as many as seven—before the profound lassitude, the real onset of the Sleeping Sickness, approaches. The patient then becomes an automaton, even forgetting to chew the food which is placed in his mouth, finally dying of starvation, convulsions or local paralysis. The mortality of the disease, when once implanted, must be given as 100 per cent; there is no hope, except in prevention.

Professor Koch, the great German scientist, who has made so thorough an investigation of the matter, has added to the difficulties of the case by offering proofs that the disease may be transmitted in other ways than by the tsetse fly. He also claims to have discovered a connection between the disease and crocodiles, as in the neighborhood of Lake Victoria Nyanza the tsetse fly subsists almost entirely on the blood of these reptiles. Tsetse flies, both males and females, are blood-suckers and feed during the day. As they fly so swiftly and alight so softly, it is very difficult to detect them until after the mischief has been done.

ROOSEVELT'S ENTERTAINERS AT ENTEBBE.

Mr. Roosevelt was deeply interested in this status of the great fight between science and the Sleeping Sickness of East Africa, and his host and hostess at Entebbe gave him every facility to investigate the efforts being made to stamp out the plague. Mrs. George Francis McDaniel Ennis, his special hostess, is the only American resident of Entebbe, and a charming author, woman and entertainer. She was formerly Miss Ethel Kirkland, of Chicago, daughter of Major Joseph Kirkland, a brave soldier and an able writer—for some years literary editor of the "Chicago Tribune." Mrs. Ennis met her husband while traveling, the latter being en route to assume the judgeship of the Uganda protectorate. They have a son, and a beautiful, completely appointed home; no one of note, in fact, since they became residents of Entebbe has left the place without enjoying their hospitality. Of course, the formal reception of Colonel and ex-President Roosevelt, with his party, was at the hands of Sir Hesketh Bell, the governor; but the real home entertaining—the attentions which went to the great American's heart—were from Mrs. Ennis, his countrywoman; and no better God-speed toward the Nile and civilization could have been devised.



THE STORY OF THE LION.

"As bold as a lion" is the phrase most commonly used to express the highest order of courage, for by general consent the people of all countries have bestowed upon the lion the title of "King of Beasts." Certainly no other animal is so noble and majestic in appearance. Its massive head, upon which, in the case of the male animal, there is usually a long, thick mane, the King's Crown, as it were, its stout, thick legs and huge paws, together with the graceful formation of its body and sweeping tail, make it the most imposing and splendid looking animal known to natural history.

Of late years one authority has disputed the lion's title of "King of Beasts." Mr. F. C. Selous, the famous hunter, says that the lion does not carry its head as high as it should, and that it is lacking in many traits that we usually ascribe to a noble animal. Livingstone, the great explorer, declares that the lion is more correctly described as cowardly and mean than brave and noble, yet I know many instances where the lion has shown itself to be the most courageous of animals.

In common with the other large cats of the Old World, the lion has the pupil of the eye circular; but it is at once distinguished from all the other

members of the family by the long hair growing on the head, neck, and shoulders of the males to form the flowing mane. This mane varies in size and color in different individuals, but, contrary to what has often been stated, is seen on Indian as well as on African lions. Frequently the long hair of the mane is continued as a fringe down the middle line of the belly. Another distinctive characteristic of the male lion is the brush of long hair at the tip of the tail. In the middle of this brush of hair, at the very extremity of the tail, is a small horny appendage surrounded by a tuft. Much speculation has been indulged in as to the use of this so-called "thorn" in the lion's tail. One old story says that it is employed to rouse the animal to fury when the tail is lashed against the flanks.

The hair on the remainder of the body of the male lion, and on both the head and body in the female, is short and close. In the adults of both sexes the color of the body-hair is the well-known yellowish-brown, or tawny, but the tint varies in different individuals. The long hair of the male's mane may vary from tawny to a blackish-brown. Young lion-cubs are marked with transverse dark stripes running down the sides of the body, and likewise by a single stripe of similar tint along the middle of the back. The mane of the male does not make its appearance till the animal is about three years of age, and continues to grow until the age of about six years. The full length of a lion's life does not appear known, but it has been ascertained that they will live to thirty, and it is said even till forty years.

For a long period it was considered that the Indian lion differed from its African relative by the total absence of the mane in the male, which was regarded as indicating a distinct species. Owing to the differences in the length and color of the manes of African lions from different districts, it was likewise held that there were two or more species in Africa. It, however, has been definitely settled that such variations are not constant, and that there is but a single species. Although it may be that some adult specimens of the Indian lion are maneless, yet well-maned examples have been killed, while those which were stated to prove the existence of a maneless race are now known to have been not full grown.

With regard to the variations of the African lion, the Dutch hunters maintain the existence of from three to four distinct species.

For my part, I cannot see that there is any reason for supposing that more than one species exists, and as out of fifty male lion skins scarcely two will be found exactly alike in the color and length of the mane, I think it would be as reasonable to suppose that there are twenty species as three. The

fact is that between the animal with hardly a vestige of a mane, and the far handsomer but much less common beast, with a long flowing black mane, every possible intermediate variety may be found. On one occasion I shot two old male lions, which I found lying together under the same bush, both of which agreed as near as possible in size, but while the one was full-maned, with a very dark-colored fur, the other was very yellow and had but little mane. Shortly after, with a brother sportsman, I again met with a dark, full-maned lion in company with a nearly maneless light-colored one. Of still more importance was the killing of a lioness with three cubs, of which two



AFRICAN LION.

were males and one a female. Of the two male cubs, the one, owing to the dark color of the tips of the hair, was almost black, while the other was reddish-yellow. The skin of the female cub was also of a light color. Now I firmly believe that the two male cubs would have grown up, the one into a dark-skinned, black-maned lion, the other into a yellow lion, with but little mane; and further than this, I believe that the two pairs of males I have mentioned above were cubs of the same litters, and had been hunting in couples since their cubhood.

It seems quite probable that the lions of one district may differ to a certain

extent in some respects from those of another. Thus it seems pretty well ascertained that the lions from the Cape and Algeria have larger and finer manes than those from other districts. Gordon Cumming states that the manes and coats of lions inhabiting open, treeless districts, like the great Kalahari desert of South Africa, are fuller and handsomer than in those inhabiting forest districts.

The relative sizes of the Indian and African lion are: Indian from 8 to 9 feet, African from 10 to 11 feet; females are about one foot shorter than the males. Weight, from 400 to 600 pounds:

The present range of the lion includes the whole continent of Africa, from Cape Colony to Abyssinia and Algeria, although in many of the more civilized districts the animal is now greatly reduced in numbers, or even completely exterminated. In Asia it is found through Mesopotamia and South Persia to the northwestern districts of India, being nearly extinct in the latter country. Formerly the lion had a much larger range, extending westward into Syria and Arabia, and ranging over a considerable portion of Southeastern Europe, such as Roumania and Greece. Bones and teeth found in the caverns of Western Europe prove that lions once roamed over Germany, France, Italy, Spain and the British Isles. The ancient lions of Western Europe were exterminated, probably, by the cold of the glacial period; but the destruction of those infesting Eastern Europe and parts of Western Asia during the historic epoch was probably effected, at least to a considerable extent, by human agency.

In South Africa lions are now scarce in the districts to the southward of the Orange River, but are locally abundant in the regions farther north, such as Mashonaland. The lion is now quite unknown in Asia to the northward of India. The Arabs say it is found in Arabia; but of this we have at least no evidence. Occasionally it crosses the Euphrates, and a few years ago a lion's carcass was brought into Damascus. Between the Lower Tigris and Euphrates they still abound. Mr. Layard saw them frequently, and during his excavations in the neighborhood of Babylon, found fresh traces of their footsteps almost daily among the ruins. It extends also far higher up, to the jungle of the Khabour, or Chebar, on the upper Tigris, above Mosul and Nineveh (the ancient Chebar), where Layard mentions an Arab being attacked by one, and escaping with the loss of his mare.

Lions, which are very numerous in the reedy swamps bordering the Tigris and Euphrates, are found also in the plains of Susiana, the modern Khuzistan, and extend into the mountain country south of Shiraz. There is no accurate

information of their northern limits, but Captain Pierson, who spent many years in the country between Tehran and Baghdad, says that he never heard of lions in the oak forest west of Karmanshah. It is the acorns of this same oak forest which feed the wild pigs whose presence tempts the lion into the mountains of Fars. The little valley of Dashtiarjan, thirty-five miles west of Shiraz, is notorious for the number of lions found in its vicinity. Part of the valley is occupied by a fresh-water lake, on the edges of which are extensive beds of reeds; the surrounding hills, which rise four thousand feet above the valley, itself six thousand five hundred feet above the sea, are



LION CUBS AND THEIR HABITS.

covered with oak forest, or with pretty thick brushwood of hawthorn, wild pear, and other bushes, and contain very extensive vineyards. Dashtiarjan is thus a perfect paradise for swine, and they increase and multiply accordingly, so that the lions have plenty to eat, varying the monotony of constant pork with an occasional ibex, or with a calf from the herds which graze in the valley.

Like most of the larger cats, lions are essentially nocturnal in their habits, and they are thus frequently only met with by chance in districts where, from the abundance of their tracks and from their nocturnal roarings, they are known to be plentiful. During the daytime they are accustomed to lie asleep

in thick beds of reeds, where such are to be found, or in drier districts, among thickets and bushes.

The most likely places in the bush country in which to find lions, as far as my experience goes, are the rekabee thorns, the dense evergreens which line the rivers, and, during summer, the reeds on the margin of lagoons or streams, while in the open flats any patch of reeds or tall grass suffices to conceal them. The best chances for killing them are obtained in the first-mentioned spots, as you often come across them asleep when you are stealing about after game. From these and similar haunts, the lion issues forth at sundown to commence his nightly prowls; dark and stormy nights being those on which he is most active, while he is more cautious during bright moonlight nights, especially as regards his visits to the drinking-places.

Unlike most of his congeners, the lion is not a climber, and this general inability to ascend trees has saved the lives of many sportsmen and travelers, although not unfrequently at the cost of a long and thirsty waiting.

From observing both lions and tigers in their native haunts I am of opinion that the former are bolder than the latter, while they are certainly far more noisy. The first peculiarity that struck me in the African lions was their noisiness. I have constantly been for months together in countries in India abounding in tigers without hearing their cry. Indeed, it is by no means a common sound in any Indian forest. Leopards, I should say, are much more frequently heard than tigers. The cry of the two animals, commonly known as roaring, though it is utterly different from the harsh growl of anger to which the term might most appropriately be applied, is very similar, and consists of several deep notes uttered rather quickly one after the other, and repeated at longer and shorter intervals.

Very different impressions appear to be produced on different persons by the lion's roar, some listeners appearing to regard it as a rather commonplace and by no means awe-inspiring sound, while others, and we believe the majority, speak of it in far different terms. Such differences of impression must, it is obvious, be largely due to personal disposition.

Perhaps the lowest estimation of the lion's roar is that of Livingstone. He writes that "it is calculated to inspire fear when heard in a pitchy dark night amidst the tremendous peals of an African thunderstorm, and the vivid flashes of lightning which leave on the eye the impression of stone-blindness, while the rain pouring down extinguishes the fire, and there is neither the protection of a tree nor a chance that your gun will go off. But when any one is snug in a house or a wagon, the roar of the lion inspires no awe.

A European cannot distinguish between the note of a lion and that of an ostrich. In general the voice of the former seems to come deeper from the chest; but to this day I can only pronounce with certainty from which of the two it proceeds, by knowing that the ostrich roars by day and the lion by night. The natives assert that they can detect a difference at the beginning of the sound."

A recent writer, who is fully impressed with the grandeur of the lion's roar, is by no means disposed to admit the justness of its comparison to



A TROOP OF LIONS SEEN IN SOUTH AFRICA.

the voice of the ostrich. He observes that when a lion is "roaring loudly in concert with others at a short distance off, the sound is grand and awe-inspiring in the extreme; in fact, I have never heard anything of a similar nature that can compare with it, for it is no exaggeration to say that the ground actually trembles with the volume of sound. I say this unhesitatingly, for all that many people would have us believe to the contrary, maintaining that there is nothing in it, and endeavoring to compare it to the 'booming' of the cock ostrich. At a great distance, and therefore, when heard indistinctly, the low, sullen roaring of a single lion has certainly much resemblance to

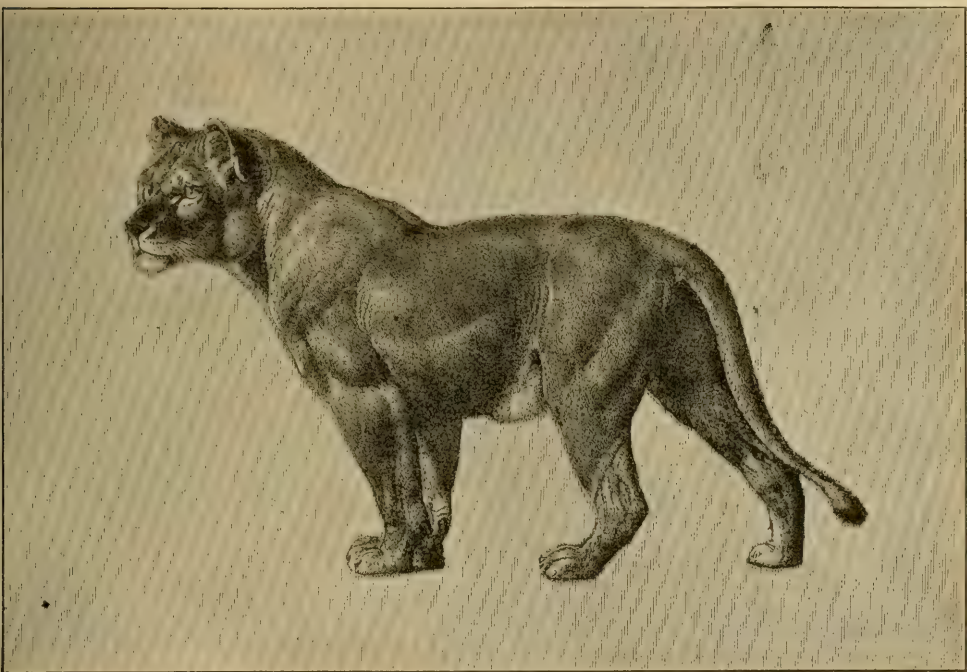
the sound emitted by the ostrich during the pairing season; but persuade either the lion or the ostrich to come nearer, and one might then as well try to compare the rumbling of cart wheels over a wooden bridge with the incessant roll of thunder among mountains. But a lion makes other sounds far more disconcerting—because usually only heard at close quarters—than that to which it gives vent when, in company with others, it has killed a head of game, or is retiring to its lair, full fed. There is the constant low growling of the lion crouching in cover, uncertain whether to fight or to fly, as, with flattened ears and nervously twitching tail, he studies the situation, hoping by his attitude to warn off the disturber of his solitude. There is the angry snarl of the lion disturbed at his meals, when his appetite is not yet satisfied, and when one has come upon him so suddenly as to give him no time to clear off; and, worse than all, the short, coughing grunts which often accompany a charge, and which startle the intruder in his domains as he bounds away. All these sounds are by no means musical, and, whether heard by day or by night, are well calculated to try the nerves.” Similar testimony as to the impressiveness of the lion’s roar is given by Gordon Cumming, who describes it as consisting at certain times of five or six repetitions of a low, deep moaning, ending off with a faint and scarcely audible sigh, while at others it takes the form of loud, deep-toned, solemn roars, quickly repeated, and increasing in intensity till the third or fourth, after which it gradually dies away in a succession of low muffled growlings, like the roll of distant thunder. Then, again, the veteran hunter Sir Samuel Baker gives his impressions in the following words: “There is nothing so beautiful or enjoyable to my ears as the roar of a lion on a still night, when everything is calm, and no sound disturbs the solitude except the awe-inspiring notes, like the rumble of distant thunder, as they die away into the deepest bass. The first few notes somewhat resemble the bellow of a bull; these are repeated in slow succession four or five times, after which the voice is sunk into a lower key, and a number of quick short roars are at length followed by rapid coughing notes, so deep and powerful that they seem to vibrate through the earth.”

This vibrating and reverberating sound alluded to in the last sentence is intensified by the habit lions often have of putting their mouths close to the ground while roaring; Livingstone mentioning an instance where a lion stood for hours roaring near his camp, and making the sound reverberate in this manner.

The intensity and grandeur of the sound must, however, be largely increased when, as is not unfrequently the case, a party of lions are heard roaring in

concert; and the din reaches its height when two or three troops of lions approach a watering-place at the same time. On such occasions every member of each troop sounds a bold roar of defiance at the opposite parties; and when one roars all roar together, and each seems to vie with his comrades in the intensity and power of his voice.

As a rule, lions commence to roar with the falling shades of evening, and continue with longer or shorter intervals throughout the night; but in secluded and undisturbed districts he has frequently heard the roaring sustained as



THE MANELESS LION OF SENEGAL.

late as 9 or 10 o'clock in the morning on bright and sunny days. During cloudy and rainy weather they will however roar, although in a lower tone, throughout the day.

Although in some districts lions are commonly met either alone, or in pairs of males and females, this does not seem to be generally the case in the interior of South Africa, where it is more usual to meet with four or five lions consorting together, while parties of from ten to twelve are by no means rare. Such a party of twelve would, in the experience of the same observer, probably comprise about two adult males, three or four full-grown lionesses,

and half a dozen large cubs, which, except for their somewhat slighter build, might easily be mistaken for mature females. On one occasion we came across a party consisting of a lion, three full-grown lionesses, and three small cubs; and if each of these females had possessed a pair of large cubs, such an assemblage would have been rightly termed a party of ten lions. It was probably such a party, although comprising more adult males, that Lord Randolph Churchill encountered during his recent journey in Mashonaland, when in company with his hunter Lee. "We were riding along," writes his lordship, "through a small open glade covered with high grass, Lee a few yards ahead of me, when I suddenly saw him turn round, cry out something to me, and point with his finger ahead. I looked, and saw lolloping along through and over the grass, about forty yards off, a yellow animal about as big as a small bullock. It flashed across me that it was a lion—the last thing in the world that I was thinking of. I was going to dismount and take aim, for I was not frightened at the idea of firing at a retreating lion, but Lee called out in succession five or six times, 'Look, look!' at the same time pointing with his finger in different directions in front. I saw, to my astonishment, and rather to my dismay, that the glade appeared to be alive with lions. There they were, trooping and trotting along ahead of us like a lot of enormous dogs—great yellow objects, offering such a sight as I had never dreamed of. Lee turned to me and said, 'What will you do?' I said, 'I suppose we must go after them,' thinking all the time that I was making a very foolish answer. This I am the more convinced of now, for Lee told me afterward that many old hunters in South Africa will turn away from such a troop of lions as we had before us. We trotted on after them a short distance to where the grass was more open, the lions trotting along ahead of us in the most composed and leisurely fashion, very different from the galloping off of a surprised and startled antelope."

Lord Randolph Churchill himself counted no less than seven lions, while his hunter believed that there were several more in the party.

When a male lion has selected a female partner the union very generally lasts for the greater portion or the entire lives of the pair. From the evidence of specimens kept in captivity it is known that from two to six cubs may be produced at a birth, at least in the captive condition. It is stated, however, that in India wild lionesses do not produce more than two or three cubs at a birth. When caught young, lions are easily tamed, and the whole disposition of the animal in captivity is much more gentle than is that of the tiger.

In Persia the staple food of the lion is the wild pigs that frequent the

oak forests to feed on acorns. In India, the lion usually feeds on deer, antelope, wild pigs, cattle, horses, donkeys and camels. In Africa, they prey upon antelopes, zebras, quaggas, buffaloes and giraffes.

Were a zebra, a fat rhinoceros and a fat buffalo to be killed and left out it is probable that they would be eaten in the order I have named. Soft succulent fat is what the lion probably considers most toothsome, and zebras supply this in a higher degree than any other animal, save the rhinoceros and the hippopotamus, neither of which it is able to kill; but on the other hand, the zebra confines itself to the open, as far as possible, never approaches within springing distance of a thicket, and rarely, unless when going to water, gives the lion a chance. Buffaloes, on the other hand, are nearly always



LION CUBS THAT LOOK LIKE LAMBS.

in and close to cover, presenting continual opportunities for a successful stalk; and though the danger in attacking them is much greater, as is proved by the no means rare instances of lions being maimed, and even killed in such contests, yet for the above reason they form their chief food.

It must not, however, be supposed that lions by any means restrict themselves to the flesh of animals which have fallen to their own attacks. In addition to eating the flesh of animals recently killed by hunters, lions will also prey upon carcasses in an advanced state of decomposition. When elephants have been shot, lions will prey upon the carcasses as they lie festering

in the rays of a tropical sun, returning night after night to the feast, until no more meat is left. This occurs in parts of the country abounding in game, where it would give a party of lions but little trouble or exertion to catch a zebra, buffalo, or antelope, and procure themselves a meal of fresh meat. In the same way, no matter how plentiful game may be, lions will almost invariably feast upon any dead animal left by the hunter, from a buffalo to a steinbuck, that they may happen to come across.

Near villages, when lions grow too old to be able to take game for themselves, they will take to killing goats; while women or children who happen to come in their way at night also become victims. On the other hand, when far away from human habitations, such decrepit lions catch mice and other small rodents, and will even at times eat grass, although this may be taken medicinally.

That such lions, which have become too feeble to prey upon game, would naturally develop into "man-eaters" if they were permitted to live, appears highly probable. The absence of man-eating lions in parts of Africa is due to the superior boldness of the African natives over those of India, for even among the least martial tribes of South Africa, if two or three people are killed by a lion, the population of the surrounding country is roused, and, a party being formed, the lion is usually surrounded and stabbed to death with assegais; while among such warlike tribes as the Matabele, if a lion only kills an ox, or even a goat, its fate is usually sealed, or even if not killed, it gets such a scare that it is glad to quit the district. Such a thing as a man-eater, or even an habitual cattle-slayer, would never be tolerated for an instant.

My shooting experiences in eastern South Africa, in the districts of Zululand, Tongaland, and Swaziland, show that man-eating lions are to be met with in some regions. I became an accessory to the death of two such man-eaters, one of which had well-nigh depopulated a district, having killed between thirty and forty individuals; while the second, although dwelling in an uninhabited country full of game, had become notorious for its attacks upon the camps of the hunters. The former, indeed, appeared to be an animal in the full enjoyment of bodily strength, as it is said to have habitually leaped over the high fences which surround the Zulu villages.

With regard to the method in which lions kill and carry off the larger animals upon which they prey, it may be observed, in the first place, that there is some doubt whether death is effected by dislocating the neck of the victim, as is always done by tigers. In a cow killed by a lion in Abyssinia the vertebrae of the neck were not dislocated; and I saw a lioness hold a

camel for several minutes without attempting to break its neck. I have seen a horse, a young elephant and two antelopes killed by a bite in the throat; while I have also known instances of horses and zebras being killed by a bite on the back of the neck behind the head. Buffaloes are sometimes killed by a dislocation of the neck, which is effected by the lion springing onto their shoulders, and then seizing their noses with one paw, giving the neck a sudden wrench.

It was formerly a prevalent notion that lions were in the habit of carrying



A PLAYFUL OLD LION.

off the carcasses of large animals, like oxen and buffaloes, by throwing them over their back and walking bodily away with them. All recent observers are, however, agreed that this is by no means a correct statement, and that their invariable practice is to transport such carcasses by dragging them along the ground. A South African lion would be quite incapable of lifting a buffalo from the ground, much less of leaping over a fence with it, as the lion of North Africa has been alleged to do. In referring to an instance of

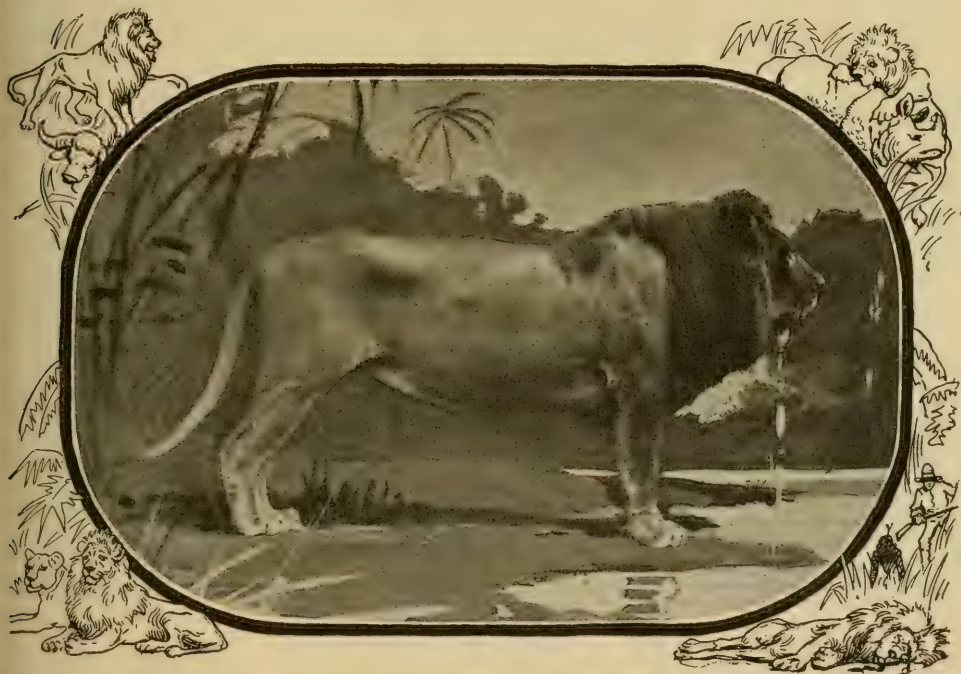
this nature when a North African lion was reported to have leaped over the thorn fence which formed a protection to a camp, and, after seizing a full-grown ox, bounded back with its victim, Sir Samuel Baker writes as follows: "In the confusion of a night attack the scare is stupendous, and no person would be able to declare that he actually saw the lion jump the fence with the bullock in its grip. It might appear to do this, but the ox would struggle violently, and in this struggle it would most probably burst through the fence, and subsequently be dragged away by the lion. * * * It is quite a mistake to suppose that a lion can carry a full-grown ox; it will partially lift the fore-quarter, and drag the carcass along the ground."

It is stated that the usual pace of a lion when undisturbed is a walk, but even then, from the length of his stride, he gets over the ground quicker than appears to be the case. When going more rapidly I have never seen a lion bound, but they come along at a clumsy gallop, somewhat after the manner of a dog, getting over the ground very quickly.

In regard to the ferocity or otherwise of the lion's disposition, very conflicting statements will be found in the writings of different observers. Thus, whereas Livingstone states that nothing would lead him to attribute to the lion either the ferocious or noble character ascribed to it by others, Sir Samuel Baker is disposed to take a rather opposite view, observing that, although he does not consider the lion to be either so formidable or so ferocious as the tiger, yet there is no reason for despising an animal which has been respected from the most remote antiquity.

All writers appear, however, to be agreed that, as a general rule (although there are exceptions), a lion will not go out of his way to make an unprovoked attack upon human beings, and that, in point of fact, he will rather shun a conflict when possible. "There is nearly always," writes Mr. Drummond, "some explanation of its behavior when it acts otherwise; either the hunter has approached so near before being discovered that the animal is afraid to turn tail, and, urged by its very fears, makes a charge; or it may be half-famished, and having got hold of some prey, either of your killing or its own, will not quit it without a contest; or, if a lioness with cubs, will fight in defense of their supposed danger." Sir Samuel Baker's testimony is of a very similar character, when he mentions that the expert swordsmen of Central Africa have no dread of the lion when undisturbed by sportsmen, although they hold him in the highest respect when he becomes the object of chase. Again, in another passage, the same writer mentions that among the Hamran Arabs of the Sudan the lions, although numerous, are never regarded as dangerous.

That lions, especially when hungry, will, however, on occasion attack human beings,—on foot or when mounted,—there is abundant evidence. A hunter engaged in stalking a rhinosceros, on looking back was horrified to find that he himself was being stalked by a lion. There was but one time in my career when a lion, driven by hunger, attacked me personally; but I believe that there are some lions which will always make unprovoked attacks. This view is supported by an account of an attack made upon three natives in Eastern Africa. The three natives in question were passing along the edge of a certain lagoon, when, without further warning than a slight rustle, a lion



THE KING OF BEASTS DRINKING AT A POOL.

sprang upon the foremost, crushing him to the ground. His terrified comrades, throwing away the chance of shooting the brute while it was still upon its first victim and its eyes probably closed, rushed to the nearest trees for safety, but, once there, feeling ashamed of their cowardly desertion of an old companion, they descended, and walking forward together were just on the point of firing, when, with a roar that almost deprived them of the power to run, the lion charged, caught the hindmost, and after shaking him for a

second or two, gave chase to the other, who, however, had profited by the time to remove himself, by a bare foot or so, out of reach of the spring the enraged animal gave as it saw that one had so far escaped. It then returned to its last victim, not yet dead, took him up in its mouth, dropped him, tossed him from paw to paw as a cat does a mouse, and at last, as if wearied by so much unaccustomed gentleness, it allowed its savage nature to gain the mastery, and with one crunch of its powerful jaw put him out of his pain." The sole survivor of this tragedy, after having been besieged for hours in a tree, during which

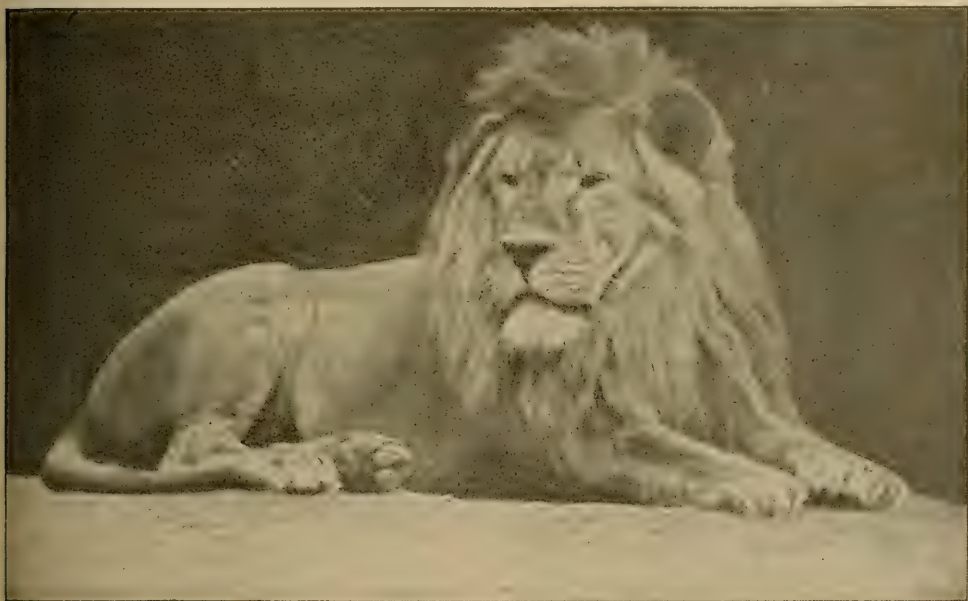


SIR EDWIN LANDSEER'S WORLD FAMOUS PAINTING OF A LION.

he had a hairbreadth escape when descending to reach his gun, finally had the satisfaction of putting a bullet through the ribs of the lion.

Lion-hunting, under any circumstances, must of necessity be a dangerous pursuit; but it may be followed to a certain extent with comparative immunity from harm by those who have the necessary nerve and coolness, coupled with sufficient knowledge of the habits of the animals. I consider the lion a far more dangerous animal to encounter than any other creature in South Africa. It is true, indeed, that a much greater number of casualties occur from buffalo-shooting than in lion-hunting, but for every lion that has of late years

been "bagged" in the interior of South Africa, at least fifty buffaloes have been laid low. As a general rule the danger is reduced to a minimum when hunting with dogs, as the lion's attention is generally concentrated on his canine foes; but even then it sometimes happens that he will dash straight through them to attack the hunter. A mounted hunter, except when the movements of his horse are impeded by thick forest or by yielding sand, can generally escape when pursued, as the pace of the average lion is not sufficient to enable him to overtake the average horse. If, however, on foot, and without dogs, though there is little danger in attacking lions in the first instance, yet to follow up



♦ A PERFECT SPECIMEN OF A FULL-GROWN LION.

a wounded one is very ticklish work, especially in long grass or thick cover, for there is probably no animal of its size in the world that can conceal itself behind so slight a screen, or rush upon its pursuer with such lightning-like rapidity.

It should always be recollected, before meddling with lions, that if you do come to close quarters with them, death is the probable result. There are cases within my own knowledge where, single-handed and armed only with a spear, a native has succeeded in killing one that has sprung upon him, without receiving in return anything but trifling injuries; but these are only excep-

tions that prove the rule that when they strike they kill. * * * It is a grand sight to see one charge a native regiment sent out after it, as they sometimes are, springing over the heads of the first line right into the center, flying about, knocking men down with every blow, until, a complete sieve of assegai wounds, it dies fighting.

The lion tries to avoid man until wounded, and it is only in exceptional cases of there being young ones to guard, or from astonishment at seeing the hunter so close to them, that they charge when being tracked. They charge with the same coughing roar that a tiger does, and come at great speed close to the ground, not bounding in the air as they are represented in pictures. Their ears are pressed close to the head, giving them the comical appearance of being without ears. So large an animal coming at full speed against you of course knocks you off your legs. The claws and teeth entering the flesh do not hurt so much as you would think. The only really painful part of the business is the squeeze given by the jaws on the bone. I felt none of the dreamy stupor Livingstone describes, but, on the contrary, felt as usual. I adopted the course of lying quite still, which, I believe, is the best thing one can do, as you are quite helpless with a heavy animal on you, and they are inclined to make grabs at everything that moves, and the fewer bites you can get off with the better.

Twice in my life I have escaped death by the ruse of feigning death when in the power of a lion, but I know of no other situation in which a man can be placed which requires as much nerve and control of the muscles. Imagine a great brute nosing and sniffing every part of your body from your head to feet; imagine feeling its hot breath or the saliva from its dripping jaws upon your face, while you know that to stir or give any sign of life means instant death, and you will have some idea how a hunter feels when at the mercy of the king of beasts.



THE STORY OF THE ELK.

The fiercest and most interesting combat I ever witnessed between wild animals was a struggle between two male elk for the leadership of a herd.

The challenger was a fine bull weighing about a thousand pounds. He had been roaming solitary and suddenly had come upon a herd at the head of which was a bull almost his equal in weight and beauty.

As he approached the herd, or harem, as it is called sometimes, the challenger blew a loud whistle of defiance. If the reader will take a half-pint bottle and blow strongly into it, a similar sound will be produced. This whistle was at once answered by the ruler of the herd, who stepped boldly forth to do battle with the intruder. With heads lowered between their forefeet, the two adversaries walked around waiting for an opening. The leader of the herd was the first to be thrown off his guard, and the other made a savage rush at him. The leader instantly recovered, and countered the charge. As they rushed together their antlers struck with such terrific force that the report could be heard half a mile away. Then they slowly retreated, bellowing, grumbling, and grinding their teeth in a paroxysm of rage. Again they circled around and when an opportunity offered again they clashed. This continued for some time, and I noticed that the leader of the herd was growing weaker at each successive encounter. He was now fighting on the defensive, while the intruding elk kept up his aggressive charges.

At last the leader of the herd could no longer meet the assaults of his

stronger antagonist. He was caught off his guard. The intruder made a fierce charge. The other turned to meet it, but he was not fast enough, and received a frightful wound in the flank from his assailant.

The leader sullenly retired, bellowing as he went, and the intruder installed himself at the head of the herd and led his wives in a different direction from the wounded animal. I put the wounded animal out of pain and secured a beautiful pair of antlers.

The wapiti, commonly called the elk, is the largest representative of the deer family in America. Full-grown stags have been shot by me, the weight of which was over a thousand pounds. They measure as high as six feet (eighteen hands). The antlers sometimes measure sixty-four to sixty-six inches in length.

The range of the wapiti has of late years been greatly restricted by the advance of civilization, until now the animal is nearly extinct. The wapiti was formerly found in nearly all parts of the United States, in Mexico, and in Canada, as far north as the 60th parallel of north latitude; but it has vanished before the approach of civilization, and is now found only in the remotest mountain fastnesses west of the Missouri River, or in the great forests of British America. The largest herds now remaining outside of the National Yellowstone Park are found in the Olympic Mountains of Washington, and among the mountains of Vancouver Island. There are still some remaining in the Cascade and Rocky ranges, but they do not congregate there in large herds as they do in the Coast ranges. Less than ten years ago there were many secluded districts in Colorado, Wyoming, and Montana, where, during the late autumn and winter, wapiti might be seen banded together in herds numbering many thousands of individuals; whereas now, it is seldom that any can be found together.

The general habits of the wapiti seem to be very similar to those of the red deer, the old stags living apart from the main herd during the greater part of the year; and in the pairing-season taking exclusive possession of a party of hinds, after having vanquished their rivals in fight. The shedding of the antlers is late, generally taking place in the full-grown stags during the latter part of December or the first half of January. The new antlers begin to sprout in March or April, and are fully complete by the middle of August.

When wapiti were found on the great prairies, the Indians were accustomed to hunt them on horseback by forming a wide circle of mounted men, from whom a certain number were detached to harass the unfortunate animals until they were brought to a standstill. Another favorite method was

by forming a cordon of horsemen and driving a whole herd over a precipice. At the present day the more sportsman-like method of hunting is, however, almost exclusively employed; and it appears that the wapiti is an animal far less difficult to approach than the red deer, while it is killed by a comparatively slight wound.

The wapiti swims well, and is fond of the water. He feeds upon lichens, young shoots of trees, wild vines and various grasses. His cry is very peculiar, something like the shrill sound of a railway whistle, and audible at the



YOUNG BULL ELK.

distance of a mile. His flesh is well-flavored and nutritious; and his skin is much used in the manufacture of belts, thongs and moccasins. The teeth are worn by the Indians as a personal decoration.

In the autumn, in the pride of his strength, he fears no enemy; and in the company of his wives, that look to him for the protection which he is ever ready to afford, passes the hours safe from the attacks of those animals which at other seasons make him their prey. In the deep snow of winter

he can neither fly nor oppose a successful resistance to his foes, that set upon him in troops; and in the spring, when thin and feeble from the want of necessary pasturage, and deprived of his horns, that drop off during the early months of the year, he is but a semblance of his former self, and can make only a feeble defense against the most insignificant of his enemies. At such a time he keeps in the thickets, as much out of sight as possible, shunning the company of even his own species, and remaining a recluse until his horns are grown again.

During spring and summer the bulls herd by themselves. The females run together in small numbers, accompanied by their fawns. They have few means of defense when thus absent from their lords, and if set upon by any roving animal, are obliged to place all their hope of escape in their speed. A most formidable enemy to them is the puma, which, fortunately for them, is but seldom met with. This animal is the largest and most powerful of the cats which live in the districts inhabited by the wapiti. This powerful animal is possessed of great cunning, as the following instance will show. A hunter, in pursuit of a puma, or panther, as it is often called in America, for a greater portion of a day, after proceeding some time, observed that he came again and again upon a man's track, mingled with that of the puma; and he soon became conscious that the crafty animal had made a circuit, and had got behind, having thus become the pursuer in place of remaining the pursued. Instead of going any farther he quickly stepped behind a tree, and with his gun presented and ready, awaited the approach of his disagreeable attendant. Soon he saw the puma coming carefully along, sniffing his tracks at intervals, and endeavoring to catch a glimpse of him in front. Waiting a favorable moment, he fired from his concealment, and fortunately killed the animal on the spot. It proved to be a male of the largest size.

The panther frequently conceals itself in a tree, directly over the path of the wapiti. Slowly they come, those timid, graceful creatures, ever and anon stopping to sniff the air, or to catch with ample ears the sound of an enemy's foot. But there is nothing that they can hear or scent, and unconscious of their great peril they pass beneath the limb. Only an instant is needed to gather himself together, and with his natural fierceness increased many-fold by long-continued fasting, the panther descends upon the broad back of his victim. Paralyzed for an instant by the suddenness of the shock, the poor deer staggers beneath the weight of the terrible beast; then fear and the consciousness of imminent danger give it renewed strength, and it bounds through the forest in the wake of its terrified companions, with the

cruel rider tearing its tender flesh with both fangs and claws. The contest is soon over, for the deer is a defenseless creature.

The European elk and the American moose, probably members of the same species, differ from the deer in the setting-on of the antlers of the male. I shot a moose in Canada the antlers of which weighed over sixty pounds, with a span of five and a half feet. The buck was an old one, and judging from the antlers they were of ten years' growth.



COW ELK AND CALVES.

The height of the elk has been much exaggerated, some writers asserting that the male may stand as much as eight feet at the withers. I believe, however, that it is safe to say that it may attain a height of six feet, or occasionally rather more, and I may probably put the extreme limits as not exceeding six and a half feet. The weight of an average adult male elk is given as 700 lbs., but large specimens will reach 900 to 1,000, and, it is said, even as much as 1,200 lbs.

Adult male elk, and occasionally the females, have a curious pendulous

appendage on the throat formed by a dilatation of the skin, and covered with long and coarse blackish hairs. This appendage may vary in length from four to ten inches, and is known to the American hunters as the bell; its use is unknown.

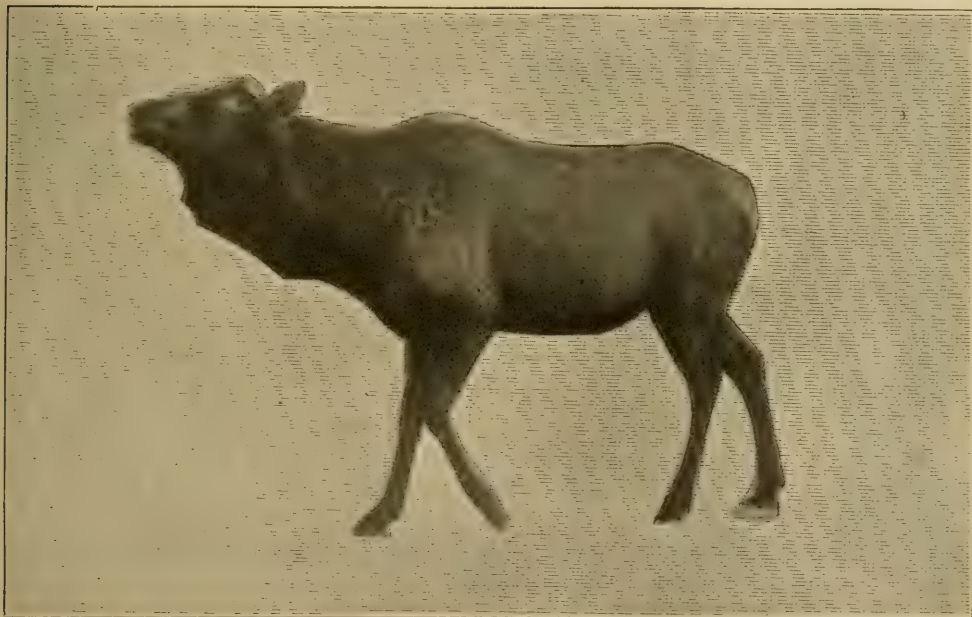
The sense of smell in the elk is very acute, and enables it to detect an enemy at a great distance. From the peculiar character of the lip, the animal is enabled to pull down the tender branches of the maple and other trees upon which it feeds. It is so heavy that, when walking on snow, its feet sink through to the ground. The moose has been domesticated and taught to draw sledges and carts. It is not a vicious animal, although dangerous enough when brought to bay. The tongue is much esteemed by epicures. From the great height of the shoulders, above the crupper, its gait is very awkward and clumsy, and, when the animal moves rapidly, the hind legs are thrown very much apart.

In Sweden and Norway elk are either hunted by being driven or stalked. In the autumn of 1885 the elk in the forest of Huneberg, which had been preserved for thirty-five years, were hunted by a royal party, when fifty-one head were shot; and in 1888 upwards of sixty-six were killed in the same forest. In this country there are now three legitimate methods of elk-hunting, namely, stalking or still-hunting, fire-hunting, and calling; the wholesale slaughter of the animals when imprisoned in their yards by the snows of winter having fortunately been prohibited by the legislature. In the far west, the best season for elk-hunting is during the months of October and November; the first snowfalls occurring in the mountains during the latter month, and the males being then incessantly calling or fighting with their fellows. To be successful in elk-stalking requires the aid of an experienced Indian guide, as very few men of European descent can attain that marvellous skill in tracking which appears to come naturally to the Indian.

It appears to be only in the north-eastern districts that the practice of calling with a birch-bark pipe is followed, as the custom is quite unknown in the Rocky Mountains. The Indian, having selected a favorable position for his purpose, generally on the margin of a lake, heath, or bog, where he can readily conceal himself, puts his birchen trumpet to his mouth, and gives the call of the cow moose in a manner so startling and truthful that only the educated ear of an Indian could detect the counterfeit. If the call is successful, presently the responsive bull moose is heard crashing through the forest, uttering his blood-curdling bellow or roar, and rattling his antlers against the trees in challenge to all rivals. In other districts the call of the male is imi-

tated by drawing the shoulder-bone of a moose against the dry bark of a young tree, and any male that may be in the neighborhood advances to answer the challenge of the supposed rival.

"Fire hunting," that is, using a torch at night, is an unsportsmanlike method of hunting. The brilliant light seems to fascinate the animal, and it will readily approach within range of the rifle. The torch placed in the bow of a canoe is also used as a lure on a lake or a river, but is attended with



BULL ELK WHICH HAS SHED ITS ANTLERS.

considerable danger, as a wounded or enraged moose will not unfrequently upset the canoe.

A favorite mode of moose-hunting, when the snow lay very deep on the ground, was by running them down in snow-shoes. Accidents were, however, frequent in this kind of hunting, more especially during the spring, when the snow is covered with a thin crust. At such times, if the hunter happened incautiously to run too near the moose, the animal would turn suddenly, and leaping upon its pursuer trample him under foot. In British America the Indians during the winter were accustomed in deep snow to make a kind of fence of three poles, tied equidistant from each other, a little

taller than a man, stretching perhaps for two days' march between lakes, or a lake and a river, or between two mountains, or in any particular place where the moose were accustomed to pass. Spaces were left vacant here and there in this fence, and in these snares were set, in which the unfortunate animals became entangled.

The flesh of the elk, in spite of some coarseness of grain, is generally regarded as forming excellent venison, although it has a slightly musky taste. The large and fleshy nose is, however, esteemed the greatest delicacy. Elk manage to maintain themselves in fair condition throughout the winter, so that their flesh is eatable when that of the ordinary American deer is so poor and dry as to be unpalatable.

Although specially protected in Ontario, the elk is, however, now rapidly disappearing from the forests of North America; and this is not to be wondered at, when we learn that some years ago several hundreds of these animals were shot on one occasion in New Brunswick merely for the sake of their hides; their carcasses being left to rot on the ground. Elk are still comparatively common in Alaska, but have more or less completely disappeared from certain districts where they were formerly abundant. They have entirely ceased their visits to Newfoundland; but in Labrador many still remain, though gradually retreating thence towards the more secluded and inaccessible portions of the country. From Upper Canada all are gone, and but few remain in Lower Canada, where, fifty years since, they were abundant. What are left have retreated to the great dense forests of the north.



THE STORY OF THE TIGER.

My first direct knowledge of the jungle tiger was obtained in a manner startling in the extreme to both the beast and myself. I was out but a short distance from our camp near Calcutta when I noticed a band of monkeys in the distance. They were perched in the tops of some trees and were chattering incessantly. I approached them rather incautiously, desiring to acquaint myself with the cause of the commotion. When under the nearest tree I chanced to look at the ground just ahead, where I saw crouched a tiger of immense size. The surprise was mutual and for a moment each of us hesitated, neither seeming prepared for the meeting. Fortunately, I was standing beside the trunk of the tree with low hanging branches, and I swung up among them before the tiger had fully grasped the situation. I remained in the tree for a half day, at the end of which time a party came out from the camp in search of me. The tiger was still on guard, and paid the penalty with his life.

Whether the lion or the tiger is the more powerful animal, is a question which has given rise to much discussion, but the opinion of those most competent to decide is in favor of the superiority in this respect of the latter. The absence of the mane, which forms such a striking feature in the male lion,

renders, however, the appearance of the tiger decidedly less imposing, and hence the second position in the series is commonly assigned to this "cat." In spite of the difference in coloration, the lion and the tiger are very closely allied animals, both having a circular aperture for the pupil of the eye, and there is also a similarity in the bones which support the tongue.

The usual manner of measuring a tiger is to follow the curves of the body. It appears that all the largest tigers on record have been measured in this manner. Full-grown tigers thus measured vary from 9 to 10 feet in length; and tigresses from 8 to 9 feet. Unusually fine specimens will, however, reach, or even slightly exceed, a length of 12 feet; 12 feet 2 inches being apparently the maximum dimensions ascertained with any approach to accuracy. There is still need of additional information as to the maximum weight attained by tigers. Some unusually large tigers, which fell to my rifle, must have weighed from 450 to 500 pounds. The Maharaja of Kuch-Bihar has killed tigers which are stated to have varied from 481 to 540 pounds. The weight of a tiger depends, of course, largely upon the condition of the animal at the time of its death; and if a specimen under 10 feet in length will turn the scale at over 500 pounds, it may be taken as certain that those of 11 or 12 feet in equally good condition must reach considerably heavier weights.

At the same time that it is the most beautiful, the tiger is certainly one of the most ferocious of quadrupeds. Indeed, so sanguinary is its disposition, that there is no animal, however strong and powerful, it will not venture to attack. Such furious combats have taken place between the lion and tiger, that in some instances both animals have been known to perish, rather than give up the contest.

It commits the most lamentable ravages among flocks and herds in the countries where it resides; and neither the sight nor the opposition of man has any power to make it desist. When undisturbed in seizing an animal, it plunges its head into the victim's body, and drinks large draughts of blood, the sources of which are generally exhausted before its thirst is appeased.

The muscular strength of the tiger is excessively great. A peasant in the East Indies had a buffalo fallen into a quagmire; and while he went to call for assistance, an immense tiger came and drew out the animal, on which the united efforts of several men had been of no avail. When the people returned, the first object they beheld was the tiger, with the buffalo thrown over its shoulder, carrying it away, with the feet upwards, towards its den. As soon, however, as it saw the men it let fall the prey, and instantly fled to the woods; but it had previously killed the buffalo and sucked its blood.

The method of the tiger's seizing its prey is by concealing itself from view and springing upon it with a horrible roar. Its cry, in the act of springing on its victim, is hideous beyond expression. Like the lion, if it misses the object, it walks away without repeating the attempt. When it can securely attack mankind, it prefers them to any other prey; but seldom makes an open attack upon any creature that is capable of resistance.

Sometimes it is easily scared. A company, seated under the shade of some trees, near the banks of a river in Bengal, were alarmed by the unex-



ROYAL BENGAL TIGER AND ITS PREY.

pected sight of a tiger, preparing for its fatal spring; when a lady, with almost unexampled presence of mind, unfurled a large umbrella in the animal's face. This so confounded the tiger that it gave the party an opportunity to escape.

Of late years tiger-hunting has become less dangerous, principally on account of the innate fear that all wild beasts seem to have of the power of firearms. When mankind first waged war against the tigers, they did not heed the firearms, but experience has taught them a fear of those terrible weapons,

which appears to have been communicated to their posterity, just as the puppy of a retriever dog will plunge into the water and fetch a stick without being taught.

Tigers are usually taken by the natives in pitfalls, at the bottom of which is planted a bamboo stake, the top of which is sharpened into a point. The animal falls on the point, and is impaled.

The general notion that tigers cannot be tamed is erroneous. They can be tamed as easily as the lion; but great caution must be used with all wild animals, as in a moment of irritation their savage nature breaks out, and the consequences have more than once proved fatal.

The coloring of the tiger is a good instance of the manner in which animals are protected by the similarity of their external appearance to the particular locality in which they reside. The stripes on the tiger's skin so exactly assimilate with the long jungle grass, among which it lives, that it is impossible for unpracticed eyes to discern the animal.

The attachment of animals to man is one of the most pleasing and attractive traits in their character. It is not confined to domestic ones alone, but extends to the most ferocious, as the lion and tiger; and to the most suspicious, as the fox and the marten. A rat has been known to accompany its master in his walks, to fly to him for safety at the least alarm, and to shun the presence of strangers. Instances of strong attachment are frequently met with in birds.

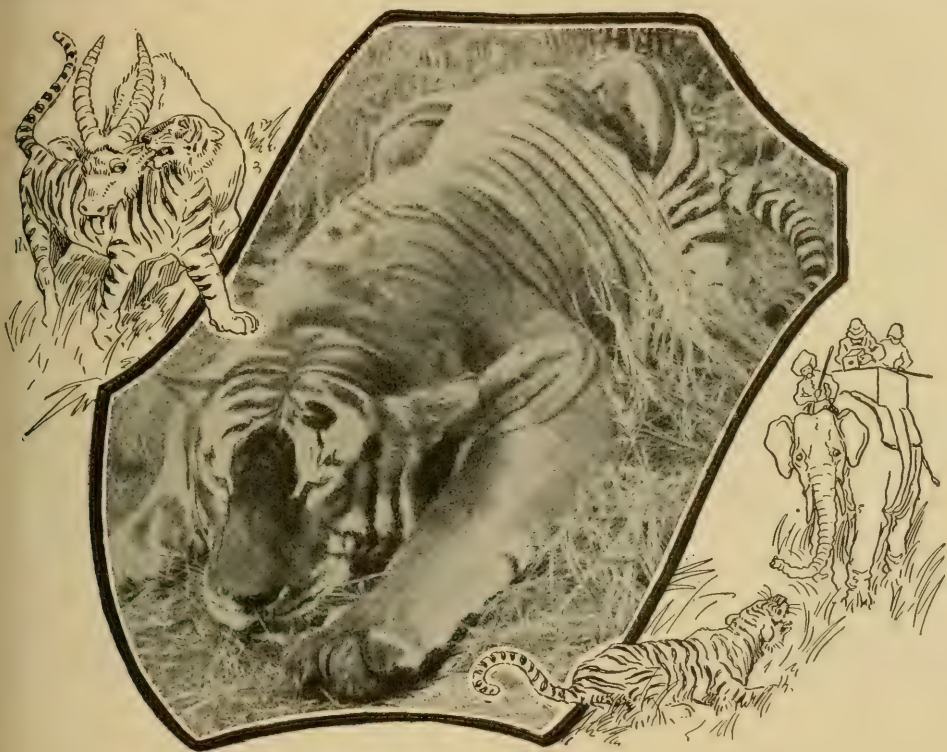
A tigress showed a fidelity of attachment in a way that would scarcely be expected in that fierce creature. She was brought from India in a vessel where she was allowed to run about. Here she became quite friendly to all, and attached to her keeper.

On her arrival in London she was turned over to other parties, and in confinement became sulky and savage, and was at last placed in a menagerie. Her old keeper one day visiting the place, asked permission to enter her den. Those in charge refused, and it was not till he exercised the most urgent entreaty that he obtained his wish, all present looking upon him as a doomed man.

No sooner, however, did the tigress recognize her old kind friend, than she fawned upon him, licked and caressed him, exhibiting the most extravagant signs of pleasure, and after he left she whined and cried for hours.

The most highly esteemed amusement in many parts of India is the contest of savage and determined tigers. They are suitably prepared for the encounter by being kept on short commons for some days before that appointed to test their strength, and no one who has not been an eye-witness of this barbarous pursuit can imagine the breathless interest and expectation with which the

assembled concourse await the entrance of the ferocious combatants upon the arena. On one occasion public interest had been wrought up to the highest pitch by numerous accounts of the warlike achievements and almost unrivaled strength of the tigers who were that day to be opposed to one another in the great arena. The one, a monster who had been the victor in several engagements already, had long been a popular favorite on account of his prowess; the other had been recently captured among the jungles, and, on account of his



WOUNDED TIGER PREPARING TO SPRING.

(Snapshot taken in the jungle from the back of an elephant.)

enormous size and savage ferocity, was esteemed a worthy adversary for the former animal.

For a few moments after being admitted to the arena the two gigantic beasts observed one another with gleaming eyeballs and open mouths; then Kagra, the popular favorite, owing to his previous victories, began to steal with cat-like motion and constantly agitated tail toward his adversary, who stood regarding him, evidently prepared for a spring. At length, with a

sudden leap, Kagra was upon his enemy, and was received with such a hearty grip that it was difficult to tell which was the assailant and which the defendant. Their huge tails lashed the air with mad fury; their enormous jaws seemed literally buried in each other's throats, while the deep and formidable claws of each were plunged furiously into the neck of the other.

Thus they gradually rose to an upright position, the whole weight of the body resting upon the hind legs, still straining and swaying one another backwards and forwards with almost incredible force and energy, in the mortal embrace. Their height must have exceeded six feet as they stood thus erect and ponderous, their distended eyes literally darting fire, and bloody foam quivering on their lips.

Gradually their furious struggles became less and less; and it was apparent that all their vital energies were hazarded on this last decisive grapple. Life and death were upon its issue, and it must now depend upon strength alone as to which would be thrown undermost, and thus compelled to abandon his hold.

The silence all around the arena, and in the galleries, was unbroken and oppressive. The audience seemed fearful even to draw a breath, and every eye was riveted upon the two ferocious beasts as they glared on one another in that terrible embrace. You might have heard the fall of a pin through the intense, painful hush of that moment of suspense. It was not long protracted, however. Kagra, more accustomed than his adversary to these contests, threw him over by a lightning movement, as unexpected as sudden, and the jungle tiger rolled over on its back in the arena, still clasped in the iron hug of Kagra.

An irrepressible murmur passed through the assemblage—a triumphant shout on the part of Kagra's backers was heard—but it was only for an instant. The jungle tiger struck his sharp claws into the eyes of Kagra, tearing one from its socket; and with an unearthly yell the wounded monster let go his hold, and strove to retreat from the contest. This, however, was not according to the jungle tiger's plans. He clung tightly and immovably to the quivering throat of his antagonist, and was dragged a few steps along the inclosure by the struggles of Kagra; then, suddenly springing from the ground, he threw himself on his adversary, tearing, biting, and rending him with savage triumph. When the battle was over, the king ordered his attendants to drive the jungle tiger to his cage with their white-hot irons. Popular favor was wholly with the victor and Kagra went to his cage without sympathy or alleviation for his wounds. He died the next day.

Wherever large tracts of forest and grass jungle remain in India, there tigers are to be found in more or less abundance. In the fever-stricken swamps and islands forming the so-called sandarbans of Lower Bengal, tigers are especially common; as they also are in the forests of Burma and Assam. Formerly they were to be met with in the grassy islands of the Bramaputra, but the navigation of that river by steamers has led to a large reduction in their numbers. In the forests flanking the easterly Himalaya, and known as the Terai, tigers still abound.

In parts of Java and Sumatra tigers absolutely swarm; and a firm of



TIGER ANGRILY WATCHING THE APPROACH OF A FOE.

Dutch merchants at Padang, Sumatra, stated that the arrivals of coffee from the interior were much below the usual average, on account of the number of tigers infesting the route; upwards of fifty men having been killed by them while engaged in bringing the coffee down country.

In spite of its predilection for water, the tiger can, however, at a pinch endure thirst for a considerable period, even in the hottest weather. As an illustration of this I may refer to an instance which recently took place, where two tigers were surrounded by nets in a small patch of jungle. The weather was hot; the circle in which they were enclosed was only seventy

yards in diameter, and the heat of the fires kept up day and night all round was considerable. Still they existed without a drop of water for ten days, suffering from serious wounds the meantime. A tiger can go much longer than this without food without serious inconvenience. Like lions, tigers are bad climbers, ascending trees but rarely, and being quite incapable of ascending a vertical stem, no matter what may be its dimensions. But, when aided by a sloping stem, or by a fork at some distance from the ground into which they can spring and thence obtain a fresh start, tigers will occasionally attack sportsmen who are waiting for them in trees. It is also stated that, when caught by inundations, tigers will endeavor to escape by climbing. Stems of trees, especially certain particular favorites, are in tiger-haunted districts marked by the vertical scorings in the bark made by the claws of tigers; these markings not unfrequently extending to a height of at least ten feet.

The idea that tigers are in the general habit of springing appears to be a popular delusion; and it is but rarely that they move their hind-legs from the ground, except when they have occasion to clear a fence or other obstacle. When so inclined, they are undoubtedly able to spring to a considerable height; and an instance is on record of a tiger having, at a single spring, pulled a native from a tree, at a distance of eighteen feet from the ground. The tiger's usual attack is a rush, accompanied by a series of short, deep growls or roars, in which he evidently thinks he will do much by intimidation; when he charges home he rises on the hind-feet, seizes with the teeth and claws, and endeavors and often succeeds in pulling down the object seized. The truth is that the tiger seldom attacks to actually kill, unless it is driven, or wounded in a hunt. It will frequently charge with a short roar if suddenly disturbed, but it does not intend to charge home, and a shout from a native will be sufficient to turn it aside; it will then dash forward and disappear, probably as glad to lose sight of the man as he is at his escape from danger.

Formerly, before European sportsmen armed with rifles had access to most parts of the country by means of railways, whole districts in India were either depopulated or deserted owing to the ravages of man-eaters; and the sites of hamlets abandoned from this cause are still visible in the jungles. Not infrequently, however, the cunning and caution of the man-eater baffles, at least for a time, all the efforts of the European sportsman to encompass its destruction; while there are districts where one of these pests may continue its depredations for a long period without coming under the notice of Europeans. The destruction of human life by tigers, most of which are probably habitual man-eaters, is, indeed, still deplorably large, especially in the more thinly-populated dis-

tricts. According to the Government returns, it appears that within a period of six years no less than 4,218 natives fell victims to tigers, while in the Central Provinces alone 285 were killed during the years 1898 and 1899. In regard to the ravages committed by individual man-eaters, one tiger in 1897, 1898, 1899, killed respectively twenty-seven, thirty-four and forty-seven people. I have known it to attack a party, and kill four or five at a time. Once it killed a father, mother and three children; and the week before it was shot it killed seven people. It wandered over a tract of twenty miles, never remaining in the same spot two consecutive days, and was at last killed by a bullet from a



PHOTOGRAPH OF YOUNG TIGERS SHOT BY MR. SEYMOUR.

spring-gun when returning to feed on the body of one of its victims. The account of the depredations of another man-eater, which infested the neighborhood of a station in the Eastern Himalaya, states that the animal "prowled about within a circle, say of twenty miles, and that it killed on an average about eighty men per annum."

It has been considered that man-eating tigers, which generally belong to the female sex, were invariably animals unable to procure other food, from the effects of age. Although this is true in a very large number of instances, it

appears that tigers may take to man-eating from a variety of other causes. Thus either wounds, excessive fat, or the fact of a tigress having had to bring up a family of cubs where food is scarce, may be the original cause of the adoption of this mode of life. All man-eaters were invariably at first cattle-stealers, which gradually became accustomed to the sight and presence of man, and thus lost their instinctive fear of the human race. When once a tiger has taken to man-eating, and has discovered how easily its victims are killed, it appears that it afterwards hunts the same kind of prey, although only some individuals confine themselves to this kind of food. Those tigers which are entirely or mainly man-eaters inflict fearful havoc on the unfortunate natives among whom they have taken up their quarters; an average native of India forming by no means a hearty meal for a tiger.

All who have had to do with them are unanimous as to the extreme wariness and caution of man-eaters, which from this cause are the most difficult to kill of all tigers. The slightest rustle or whisper on the part of the pursuer is sufficient to put the man-eater on its guard; and it is marvelous how the animal is able to distinguish between an armed European and an unarmed native.

The general method of seizing its prey is for the tiger to slink up under cover of bushes or long grass, ahead of the cattle in the direction they are feeding, and to make a rush at the first cow or bullock that comes within five or six yards. The tiger does not spring upon his prey in the manner usually represented. Clutching the bullock's fore-quarters with his paws, one being generally over the shoulder, he seizes the throat in his jaws from underneath, and turns it upwards and over, sometimes springing to the far side in doing so, to throw the bullock over, and give the wrench which dislocates its neck. This is frequently done so quickly that the tiger, if timid, is in retreat again almost before the herdsman can turn round. Bold animals often kill several head, unsophisticated cattle occasionally standing and staring at the tiger in stupid astonishment; but herds that are accustomed to these raids only enter the jungle with extreme unwillingness. Occasionally the tiger seizes his prey by the nape of the neck; the blow of his paw will, however, stun even a large animal; and it is quite possible that cattle may be killed in this manner. Tigers will on rare occasions kill buffalo and gaur, and similar prey, by hamstringing them, probably by a blow with the claws. Such hamstrung animals are occasionally met with, but the exact method in which it is accomplished remains unknown.

It is probable that a cattle-killing tiger destroyed a victim about every

fifth day; three days being employed in feasting on the carcass and resting in the intervals, while during the other two food was not specially sought. This, when we remember the number of these animals in certain parts of India, will give some idea of the losses they occasion. According to a return issued by the Government, it appears that in the Madras Presidency, during the quarter ending 31st December, 1900, the number of animals killed by tigers and leopards included 656 bullocks, 752 cows, 236 calves, 135 buffaloes, 105 sheep and 103 goats. In the returns for all India for one year, during which 1,835 cattle were killed, the total loss was set down at a little short of 60,000 head,

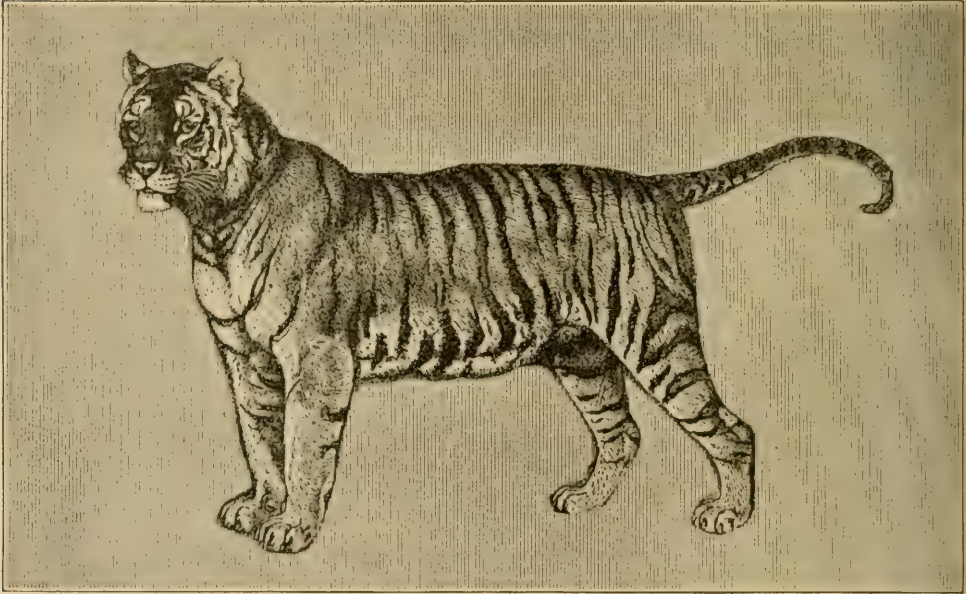


A FAMILY OF SIBERIAN TIGERS.

of which 20,000 were assigned to tigers, and an equal number to leopards. Although the man-eating tiger is much more dreaded, the cattle-lifting tiger is regarded with supreme indifference by the herdsmen of the districts it infests.

It is only of late years that the existence of tigers in Siberia has been known. Heretofore it was supposed to be purely a tropical animal, but it is now found in snowy fields and forests and the cold plateaus of Asia. It is distributed over China to the northward of Amur territory and Eastern Siberia, and in Asia over the Altai to Northern Persia and Lake Aral. The most powerful species is the East Siberian tiger, rivaling the Royal Bengal

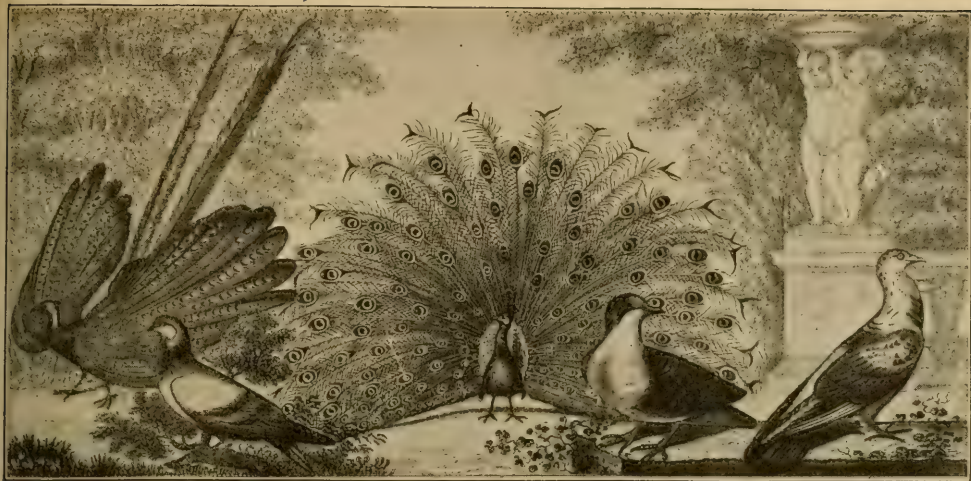
tiger in beauty of form. In size and weight the animal is not surpassed by the latter, only the coloration is less brilliant. When the Siberian tiger has taken on its winter fur, in which one might bury the hand, and the tail appears so thick that it cannot be spanned by both hands, it is looked upon with feelings of astonishment and admiration by every hunter who has ever beheld this cat-like giant. As the long grass of the jungle harmonizes with the coat of the Bengal tiger and affords him a hiding place from hunters,



A MAN-EATING TIGER.

so do the surroundings of the Siberian tiger make it difficult to see the animal at any great distance.

The home of the Siberian tiger is usually in a cave of dull gray rocks, which match the ground color of its coat. It has been less disturbed by hunters than its Indian relative, and for that reason is much bolder in the presence of man than the jungle tiger.



THE STORY OF THE DEER.

I never could understand how anyone could derive pleasure from hunting deer for the mere sport of shooting them. They are such gentle, timid creatures, so pleasing to the eye and so easily domesticated that it has always seemed brutal to me to see them shot down in mere wantonness.

To kill them for food, when necessary, is, of course, an entirely different matter. Venison is among the finest flavored meats I have ever eaten. Thanks to increasing wisdom and humanity the game laws of many countries now protect these animals against hunters who slay them out of wantonness or merely for their hides and antlers.

It is these antlers that distinguish the deer family from all others. The cow, antelope, gazelle, sheep and other species have horns, but none has a branching into tines of this horny growth.

In addition to being generally more or less branched, the most characteristic feature of an antler when fully developed is that its outer surface is rugged and devoid of any covering of skin or horn. In fact, for all practical purposes, an antler may be regarded as a mass of dead bone borne for a certain period by a living animal. Except occasionally, as an individual peculiarity, antlers are shed once every year, and, save in the reindeer, are present only in the male sex.

Antlers of the common red deer have been known to weigh nearly 100 pounds, while those of the Irish deer exceed that figure.

The red deer is the largest of our deer. It bears different names according to the size of its horns, which increase year by year. All the male deer have horns, which they shed every year, and renew again. The process of renewal is most interesting. A skin, filled with arteries, covers the projections on which the horns rest. This skin, called the "velvet," is engaged in continually depositing bone on the footstalks, which rapidly increase in size. As the budding horns increase the velvet increases also, and the course of the arteries is



FATAL DUEL BETWEEN RED DEER STAGS.

marked on the horn by long furrows, which are never obliterated. When the horn has reached its full growth it can not be at once used, as the velvet is very tender, and would bleed profusely if wounded. The velvet cannot be suddenly removed, as the blood that formed the arteries would rush to the brain and destroy the animal. A ring of bone forms round the root of each horn, leaving passages through which the arteries pass. By degrees, these passages become narrow, and finally close entirely, thus gradually shutting off the blood. The velvet, being deprived of its nourishment, dies and is peeled off by the deer, by rubbing against a tree, leaving the white hard horn beneath.

A fine specimen of the red deer will stand fully four feet at the shoulder. The hair on the throat forms a long fringe, most developed in the pairing-season. During summer the general color is a bright reddish brown, the head and legs being somewhat grayer, the throat pale gray, and the patch on the buttocks yellowish white. In winter, when the fur becomes longer and



A HART OF THE BLACK FOREST.

softer, the color tends to a brownish gray. Wild stags are occasionally found white.

The red deer is found throughout the temperate regions of Europe and Asia. They are shy and wary and can detect an enemy at a great distance.

In the pairing season bloody and desperate conflicts take place between the stags. The conflict generally continues for a considerable time, and nothing can be more entertaining than to witness, as I have often done, the varied

success and address of the combatants. It is a sort of wild joust, in the presence of the dames who, as of old, bestow their favors on the most valiant. In solitary encounters, there being no hinds to take the alarm, the harts are so occupied and possessed with such fury that they may be occasionally approached in a manner that it would be vain to attempt at any other time. I know of one instance where the antlers of two stags fighting in this manner became so



A YOUNG STAG WITH HIS FIRST ANTLERS.

firmly interlocked that the victor was unable to disengage himself from his dead antagonist, and was thus held captive until killed by a forester.

THE VIRGINIAN DEER.

The main group of American deer is represented by the well-known Virginian deer, found in the northern half of the American continent. The variations which occur in the antlers of the Virginian deer are only paralleled by

those found in the reindeer. The tail is long. The summer coat of the Virginian deer is a bright bay, from which it derives its common local title of red deer, but in winter the coat becomes of a grayer tinge. At all seasons of the year the throat, a ring above the muzzle, a spot above and below the eye, portions of the inside of the ear, the inner surfaces of the limbs and the underparts are, however, white. The upper surface of the tail is dark brown, and even in winter there is a more or less reddish tinge throughout the coat. In build this deer is the most elegant and graceful of all its compatriots. Its variation in size is so great that it would be useless to give any measurements,



VIRGINIAN DEER IN A POOL.

although it may be mentioned that unusually fine bucks are said to weigh as much as 200 pounds.

In the Adirondack region this deer frequents the mountain sides as well as the lower valleys and rivers. It feeds upon grasses, marsh and aquatic plants, the leaves of certain trees and shrubs, blueberries, blackberries and the nutritious beech nut.

Although shy and timid in the extreme, and at first retreating rapidly before the advance of cultivation, these deer soon regain confidence, and come back to their ancient haunts. Their speed is great, and they are excellent and rapid

swimmers, even young fawns while still in the spotted coat taking readily to the water. During long-continued deep snow these deer frequently collect together in parties, sometimes of considerable size, and form "yards."

The legitimate method of hunting them is by stalking.



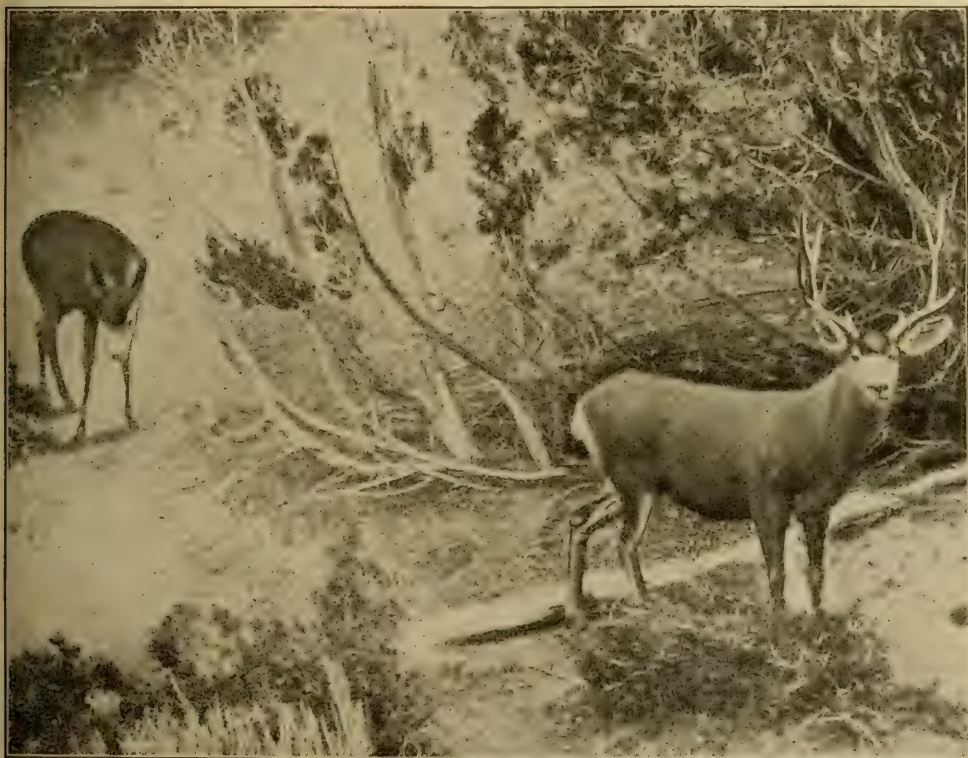
VIRGINIAN DEER, SWIMMING.

THE MULE-DEER.

The mule-deer of Western America is so called on account of the enormous size of its ears.

In height the mule-deer is fully equal to the Virginian deer, but it is a more stoutly built and much less graceful animal, with proportionately shorter limbs,

while the ears are nearly double the size of those of the latter. The tail is short, and quite unlike that of any other deer, being round, naked below, and covered above with short white hairs, terminating in a long brush of black ones. In summer the coat of the mule-deer is very thin and sparse, and generally of a reddish color, with a large white patch on the buttocks; but in winter the general color is steel-gray, the individual hairs being tipped with black. There is much more white on the face than in the Virginian deer. In a variety from



MULE-DEER—BUCK AND DOE.

California the color is more decidedly red, and there is a black line running along the middle of the upper surface of the tail.

The mule-deer is found throughout the greater part of the Missouri River district, and thence westward on the plains, in the Rocky Mountains, and in the Sierra Nevada. It is an inhabitant of rough, broken country, and on the plains is usually only to be found about high buttes, in the bad-lands, or where the

country is diversified with rocky ridges, dotted here and there with scattered pines or junipers. Its favorite resorts are the *coulces*, gulches, and cañons which so often break up the high table-lands of the central plateau of the continent; but it is as often to be found among the green valleys high up on the mountain-sides, or, in summer, among the low trees that grow just below the snow-line. It is to such localities as the last-named that the bucks resort during the summer when they are growing their antlers, and when their thin coat of hair affords them little or no protection against the flies.



FAWN OF THE VIRGINIAN DEER.

Instead of running in the even manner of the Virginian deer, mule-deer progress by a series of bounds, all their feet leaving the ground at once. For a short distance their pace is rapid, but it soon slackens. As in the case of the Virginian deer, the number of fawns produced at a birth is nearly always two.

The mule-deer is the favorite "game" of the Rocky Mountain hunter, and although game laws have been passed for their protection they are rapidly becoming less in number every year.

THE FALLOW DEER.

The visitor to England notices the deer which run in the large wooded parks as do our cattle in the fields of the American farmer. These are the Fallow deer. There it is both ornamental and prized for its meat called venison, which is fat and juicy. It has beautiful wide spreading horns. The buck or male deer is about three feet high at the shoulder. The head is short and broad, the



THE FALLOW DEER.

tail between seven and eight inches long. The color of the animal, both buck and doe, is a rich yellowish-brown in summer; sometimes spotted with white. In winter the tints are more somber and grayish.

There is, however, a dark brown variety in which the spots are scarcely distinguishable, or wanting, and specimens may be seen exhibiting every

gradation in color from pure white nearly to black. The hair is comparatively short and fine, and there is no mane on the neck and throat.

The fallow deer is a native of Northern Africa and the countries bordering the Mediterranean, and in a wild state is still abundant in Sardinia, Spain, and some of the islands of the Grecian Archipelago. From these countries it has been introduced into Central Europe, where it flourishes well, although needing some protection during the winter in the more northerly regions. At what period this introduction took place is, however, quite uncertain, although in Britain it was evidently many centuries ago.

Bell observes that "fallow deer are gregarious to a great extent, associating in large herds, the bucks apart from the does, except in the pairing-season. Most persons must be familiar with their boldness and the confident manner in which they will approach mankind, where they are well accustomed to his presence. . . . Like the other species, the fallow deer feeds on herbage. It has been noted that it is especially fond of horse-chestnuts, which the bucks knock down from the branches with their antlers, and this tree is consequently frequently planted in deer-parks. The young male exhibits the first signs of his antlers in his second year, when they make their appearance as simple snags; the animal being then called a pricket. In the fifth year the antlers attain their full development, although some additional small points may be added in the following season."

It has been stated that the dark variety of the fallow deer was introduced from Norway by James the First, on account of its hardy constitution. This, however, has been proved to be incorrect. This breed existed in Windsor Park as far back as the year 1465. The fallow deer of Windsor Park include both the spotted and the brown breeds; but in Epping Forest only the latter occur.

Locally they are referred to as "the old forest breed," and are comparatively small in size, of a uniformly dark brown color, and with very attenuated antlers—peculiarities which have no doubt been brought about by continued isolation, without the admixture of any fresh stock for many generations. It is remarkable that no individuals of the true fallow color (i. e., yellow dun) or spotted with white are ever seen in this forest. This in some measure proves the antiquity of the stock, which would otherwise show in their progeny a reversion to one or other of these varieties, which elsewhere are so common. The keepers assert that not only are there no spotted or fallow varieties here, but that they have never observed any spotted fawns, the latter being dark like their parents. If this observation

be correct, it is very remarkable; for it is generally supposed that the fawns of all fallow deer are spotted at birth, and that, except in the permanently spotted variety, the spots disappear with age. The venison of the fallow deer is generally considered superior to that of the red deer.

THE BLACK-TAIL DEER.

By the hunters in Colorado the mule-deer is commonly spoken of as the black-tail, although that name properly belongs to a species confined to the



BLACK-TAIL DOE SWIMMING A RIVER.

mountain-ranges bordering the Pacific in the neighborhood of the Columbia River, and unknown to the eastward of the Sierra Nevada. This deer is rather smaller than the mule-deer, with relatively smaller ears, but nearly similar antlers. The comparatively short round tail is black throughout, except for a short strip of about one-fourth the circumference running along the under surface. The general color in winter is tawny gray with white on the underparts and throat. The face is gray, and the legs a dark cinnamon color. In summer the color changes to bay.

THE MUSK DEER.

In the Himalaya Mountains is found the musk deer, a clumsily built animal standing about 20 inches at the shoulder, with peculiarly coarse, brittle, and rather long hair, somewhat resembling pith. This deer has no antlers. All the limbs are of considerable length, and the hinder pair are longer than the front ones. The ears are very large and the tail is short; terminating in the male in a tuft, but hairy throughout in the female. The male has a peculiar sac-like gland in the skin of the abdomen, which yields the musk of commerce. The general color of the fur is a rich dark brown, more or less speckled and mottled with gray and tawny; the individual hairs having black tips, beneath which is a ring of white, while for three-quarters of their length they are white at the base. The chin, the inner borders of the ears and the inside of the thighs, and not unfrequently a spot on each side of the throat, are whitish, while the under-parts and the inner surfaces of the limbs are paler than the body. Some individuals are, however, considerably paler than ordinary, while in others there is a more or less marked yellowish tint; and others, again, are blacker. The young are spotted.

The musk-deer utter a kind of hiss when alarmed, and when captured they give vent to a series of screams; with these exceptions they appear to be silent, even in the pairing-season.

THE PAMPAS DEER.

The American deer differ entirely from those of Asia and Europe in the character of their antlers, which are either in the form of simple spikes, like the little red brocket of South America, or divided in a fork-like manner, like the mule deer of the Rocky Mountains and Sierra Nevadas.

The most important group in South America is the Pampas deer, which stands about two and one-half feet at the shoulder. Its range extends from Paraguay and Uruguay through Argentina into Northern Patagonia. The hair is thick, coarse and glossy; its color on the upper parts being light reddish brown. The lower parts of the flanks, as well as the chin, throat, chest and a stripe on the limbs, are dusky; while the under parts, inner sides of the limbs, under side and tip of the tail, and insides of the ears are white.

If a person crawling close along the ground slowly advances towards a herd the deer frequently, out of curiosity, approach to reconnoitre him.

The male of the Pampas deer possesses an unpleasant and penetrating efflu-

vium, which, as I can personally attest, can be detected at a distance of several miles. During the day these deer generally lie concealed among the tall pampas grass, coming out to feed at sunset, and continuing throughout the night. Their speed is very great, and it is only by the very best horses they can be ridden down, while even then, if they have any considerable start, they are pretty sure to escape. The fawns are born in the winter and spring, and it does not appear that there is ever more than one at a birth. Both parents aid



PAMPAS DEER OF SOUTH AMERICA.

in protecting their young, and the doe is especially clever in aiding the escape of her fawn. When the doe with fawn is approached by a horseman, even when accompanied by dogs, she stands perfectly motionless, gazing fixedly at the enemy, the fawn motionless at her side; and suddenly, as if at a pre-concerted signal, the fawn rushes directly away from her at its utmost speed; and going to a distance of six hundred to a thousand yards conceals itself in a

hollow in the ground, or among the long grass, lying down very close with neck stretched out horizontally, and will thus remain until sought by the dam. When very young, if found in its hiding-place, it will allow itself to be taken, making no further effort to escape. After the fawn has run away, the doe still maintains her statuesque attitude, as if resolved to await the onset, and only when the dogs are close to her side she also rushes away, but invariably in a direction as nearly opposite to that taken by the fawn as possible. At first she runs slowly, with a limping gait, and frequently pausing, as if to entice her enemies on; but as they begin to press her more closely, her speed increases, becoming greater the further she succeeds in leading them from the starting-point. The alarm-cry of the Pampas deer is a low, whistling bark, but this is never uttered when the doe has a fawn by her side.

DEER OF THE PHILIPPINES.

Very different from all the other members of the deer family is Prince Alfred's deer from the Philippines, which has at all ages and all seasons a spotted coat. This deer stands about $2\frac{1}{2}$ feet at the withers; and its color is a dark chocolate-brown, with about six longitudinal rows of somewhat indistinctly-marked yellowish spots. The antlers are comparatively short, and have the front line of the terminal fork directed inwardly, while the outer surfaces of the ears are nearly devoid of hairs. It is common in the Island of Luzon.

The dam makes her offspring lie down by a pressure of her nose; and it will never stir or lift up its head the whole of the day, unless you come right upon it, as I have often done. It lies like a dog, with its nose to its tail. The hind, however, although she separates herself from the young fawn, does not lose sight of its welfare, but remains at a distance to windward, and goes to its succor in case of an attack.

THE MEXICAN DEER.

At first sight, the Mexican deer is easily mistaken for the mule deer on account of its enormously long ears. A more intimate acquaintance with the pretty animal shows that it is of a family by itself, and can readily be distinguished from the mule deer by its tail, which is long and flat, with a pointed end, similar to the Virginia deer. Its upper part is darker than in any other species—almost black. The Mexican variety is possessed of the

white border-line beginning at the cleft of the short and broad hoofs and ascending, similar to the Central American and South American mazama deer. The most striking feature of the animal, however, is the entire form of its body and the color of its coat. The Mexican deer is not possessed of so fine a head or such a light and graceful build as the Virginia deer proper, with which it, however, agrees in the absence of the marked dark band of the chin. Its long, brown coat of hair, which is somewhat speckled on the body, has nothing in common with the general features which so admirably adorn



A MEXICAN DEER.

the Virginia deer. This peculiar coat, which does not alter with the seasons, is probably caused by the animal living in a mountainous country.

THE BARKING DEER.

One of the most interesting members of the deer family is the Indian Muntjac, known there as the barking deer, and in Hindustan as the kakar.

This animal stands from 20 to 22 inches in height at the shoulder, and

has fur of a deep chestnut color, becoming darker on the back, and paler and less brilliant below; the chin and upper part of the throat, as well as the hinder portion of the under surface of the body, and the inner sides of the thighs and lower surface of the tail, being white. The antlers are generally only 3 or 4 inches in length.

The kakar is essentially a forest-dwelling deer, and appears to be restricted to hilly regions. Its range includes suitable districts throughout India, Ceylon and Burma, whence it extends through the Malay Peninsula to the islands of Sumatra, Java, Borneo and Hainan.

These deer are solitary creatures, usually found singly or in pairs; the name of barking deer being derived from their peculiar cry.

Many visitor to the various hill stations of the Himalaya, who may never have seen a kakar, must probably be well acquainted with its voice, which is wonderfully powerful for such a small animal. It is rather difficult to convey a correct idea of it by words, but it may perhaps be best described as a hoarse, resonant bark. The cry may frequently be heard in the mornings and evenings, and it is also often uttered when the deer is alarmed, when it hears any loud or unusual sound, or suspects the existence of any danger. Occasionally a kakar will continue to bark, at short intervals, for an hour at a time, and advantage may be taken of his betraying his whereabouts to stalk him.

Kakar are adepts at making their way at speed through the most dense jungle, and run with their heads low and their hind-quarters elevated. When running, a peculiar rattling sound is produced by these animals, which is thought to originate in the mouth, although in what manner is still unknown. The bucks, when attacked by dogs, appear to use their tusks, which curve outwards in a peculiar manner, as their chief weapons of defence, and are able with them to inflict gashes of considerable depth. The venison of the kakar is considered superior to that of most of the Indian deer.

I have stalked and shot kakar at various times, and have also had them driven out of cover; many may be found in this manner, but, unless one knows their usual runs, it is difficult to know where to post oneself. Like many other animals, the kakar objects to being driven, and will break back through the beaters in order to make his point. As they only give a chance of a snap-shot at short range, it is easier to kill them with a charge of shot than with a rifle bullet.



THE STORY OF THE MOUNTAIN LION.

Many a young hunter in the Rocky Mountains has been startled out of a sound sleep by a wild, unearthly cry unlike any other sound of the forest.

"What's that?" he would ask, listening to catch a repetition of the sound.

"Go to sleep," replies the old hunter, who is his companion; "that's only a painter,—what most people call a mountain lion. They won't bother us; go to sleep."

The mountain lion is the largest representative of the cat family in America. It is often called the panther, a word the old-time hunters corrupted into painter. Some works on natural history give it the name of cougar, but I prefer the name given it by the Peruvians—Puma, which has been adopted by all American zoologists.

In regard to the dimensions of the puma, it is stated that a male preserved in the museum at Washington has a total length (measured along the curves of the body) of 6 feet 7½ inches, of which 2 feet 2½ inches are occupied by the tail. A large male killed in Arizona measured 7 feet in total length, of which 3 feet was occupied by the tail; while a smaller male from the same locality had a total length of only 6 feet, of which the tail took up 1 foot 11 inches. The largest individual of which the measurements can be regarded as authen-

ticated was one killed in Texas in the year 1846, of which the total length was 8 feet 2 inches, the length of the tail being 3 feet 1 inch. A stuffed specimen measures 9 feet 1 inch in total length. I believe that the length may in some instances be as much as 11 feet.

In the parts of South America where cattle and horses are largely bred the puma is a terrible scourge. Indeed, so partial is it to horse-flesh, that in



MOUNTAIN LION, TREED.

some parts of Patagonia it is almost impossible to breed horses owing to the destruction of their colts. An instance is related of a puma springing on a colt among a drove in charge of a driver, and killing it so suddenly by dislocation of the neck that the unfortunate animal was actually dead before it fell to the ground. It further appears that in districts where pumas abound the semi-wild horses of South America can scarcely maintain their existence, owing to the slaughter of their colts. The puma does not, however, confine its ravages

on horses to the colts, but will also attack and kill full-grown adults. The same is true for cattle, among which calves more generally, and cows rarely, fall victims to the puma's rapacity. Horned cattle are, however, less preferred than sheep, which, next to horse-flesh, forms its favorite food in pastoral districts. Indeed, so partial are pumas to mutton, that one has been known to make use of a calf-pen as a place of concealment from which to raid on a sheep-fold, passing through the former without offering to molest its tenants.



A PERFECT SPECIMEN OF MOUNTAIN LION.

The acme of daring on the part of the South American puma is, however, reached in the attacks which it makes upon the jaguar; and it appears that in North America the puma exhibits an equally marked hostility to the grizzly bear. In these respects the puma is undoubtedly entitled to be regarded as one of the boldest and fiercest of carnivores in proportion to its size.

I once, and once only, killed a puma, and nothing will induce me to kill another. On the occasion referred to a puma was found, which sat perfectly still with its back against a stone, not even moving when lassoed. I dis-

mounted, and drawing my knife, advanced to kill it; still the puma made no attempt to free itself from the lasso, but it seemed to know what was coming, for it began to tremble, the tears ran from its eyes, and it whined in the most pitiful manner. I killed it as it sat there unresisting before me; but, after accomplishing the deed, felt that I had committed a murder. If this were an isolated case, it would not be of much importance, but scores of instances attest that this strange and inexplicable behavior is characteristic of the South American puma, and that it almost invariably resigns itself to death in this unresisting manner. Very different is, however, the behavior of the puma when attacked by a hunter accompanied by dogs. At such times, the animal is roused to the fiercest paroxysms of rage; and with hair erect and eyes flashing like balls of lurid fire, it rushes spitting and snarling on the dogs, utterly regardless of the presence of the hunter. So thoroughly indeed is the hunter ignored on such occasions, that he may actually belabor the puma on the head with a cudgel without drawing its attack upon himself; the animal receiving such blows without retaliation, and calmly waiting its opportunity of making a rush upon the dogs.

Strange as it may at first sight appear, the pumas of the Adirondacks were wont to prey largely upon the porcupines which are found in abundance in that wilderness, and individuals were frequently killed with their mouths and lips, and sometimes other portions of their bodies, absolutely bristling with the quills of porcupines. Whether, however, these animals were selected as an article of food from choice, or whether the pumas were driven to devour them from inability to capture other prey, is uncertain. Be this as it may, porcupines are creatures which, from their sluggish habits and contempt of ordinary foes, may be easily captured, and would be sure to come in the way of the puma during its nocturnal wanderings. The North American puma will eat almost anything, from deer down to rats, mice, fish and even snails.



THE STORY OF THE CAMEL.

The Arabs who inhabit desert regions would be helpless without the camel, which animal is to them as essential as the railroad is to the American citizen. Northern Africa and Central Asia embrace regions thousands of miles in extent, in which the camel is almost without exception the only large animal that can thrive on the scant supply of vegetation and water afforded. Hot, burning sand under the torrid sun offers no impediment to the sure-footed "ship of the desert," as the camel is called.

The camels of the Old World, and the llamas of the New, form a group of ruminating animals distinguished widely from the true ruminants, and which probably have had a totally distinct origin from more primitive even-toed members of this group.

The camels of the Old World, of which there are two distinct species, are characterized by their great bodily size and bulk, and the presence of one or two large fatty humps on the back. The feet are broad, with the toes very imperfectly separated; and the tail is comparatively long, reaching nearly to the hocks, and furnished near the end with long hair forming a terminal tuft. Callous pads, on which the animal rests when lying down, and which are present at birth, are found on the chest, the elbows, the wrists (commonly called the knees), and the knees. The whole form of these animals is far from beautiful, while the head is ugly in the extreme; and this want of bodily beauty is accompanied by a viciousness of temper and general stupidity of

disposition which can scarcely be paralleled elsewhere among domesticated animals.

The best-known species is the true or Arabian camel, which is found both in Africa and Asia, and is characterized by its single hump. It is a long-limbed animal, with a comparatively short coat of hair, and soft feet, adapted for walking on yielding sandy soil, and standing from about six feet eight inches to seven feet in height. The head is comparatively short, with a long and sloping muzzle, and convex forehead; the eyes are large, with a soft expression; and the small rounded ears are placed far back on the sides of the head. The contour of the back rises from the setting on of the neck to the loins, and then falls rapidly away to the tail. The hump, when the animal is in good condition, stands upright, but it alters considerably in shape according to age. The richer the food of the camel, the larger is its hump; while, when the food is poor and dry, the hump decreases in size; and accordingly in the rainy season this appendage attains its maximum development, while in the dry months it proportionately shrinks. In high-conditioned animals, the hump should form a regular pyramid, and occupy at least a quarter of the whole length, but when the animals are half-starved it almost disappears. The color of the hair is very variable, although a light sandy is the most common hue; there are, however, white, gray, brown, and even totally black camels; but those of the last-named color are held by the Arabs to be worthless.

The food of the camel in its natural state probably consisted entirely of branches and leaves of trees, and although grain is now largely given, a certain amount of green-food is absolutely essential to the animal's health. No matter how thorny the boughs may be, they are quite acceptable to the camel; and it is perfectly marvellous how the animals manage to eat such food without injury to their mouths. On such a diet, or even on dates, camels will do well; but when compelled to work for days with little or no food, they soon break down, as was disastrously shown in the expedition to Khartum.

The dromedary camel, called by the Arabs the "ship of the desert," because it serves to transport over an ocean of sand the commodities which the nomadic tribes are forced to seek in distant countries, possesses all the requisites for performing long journeys. Robust, docile and patient, it pursues its course with a steady gait, browsing a little on its way, and not needing water for three or four days. The elevated position of its head and its long neck prevent its being suffocated by the sand of the desert; its eyes, defended by

thick eyelids, are half closed to avoid the glare of the sun; its fleshy feet are remarkably broad, so that they produce only a slight impression upon the yielding surface of the desert, over which other animals find great difficulty in walking.

Its pace, suited to that of man, renders it admirably adapted to the movement of caravans, in which there is always a crowd of persons on foot. Considered as a beast of burden, the dromedary camel is of unquestionable



BACTRIAN CAMEL OF CENTRAL ASIA.

value in countries where the heat of the sun and the scarcity of food and water preclude the possibility, not only of any other domestic animals bearing burdens, but even of their traveling with speed and safety for great distances.

If the camel may be compared to a merchant vessel, the dromedary merits the title of a ship of war, since it is suited to the journeys and combats which lead the Arabs to traverse great distances over an ocean of sand.

Considered as a direct auxiliary of man in war, the dromedary may in many cases advantageously replace the horse. That the ancients employed it in war is a fact attested alike by monuments and writers.

Owing to its many services, the pagan Arabs held the dromedary camel in such veneration that they consecrated to the gods three females, which were exempted from labor, and the cream of whose milk was used for libations.

The pack-saddle of the camel consists of a cushion of cloth filled with fibres of the date-tree. The ends of this cushion are doubled together and form the inner part of the pack-saddle. Above this are placed two props or wooden angles, fastened together by two sticks of equal size made fast by means of small cords. The hump of the camel comes between the two branches of the pack-saddle. Two large bags usually constitute the load of a camel. They are suspended to the crosspieces which fasten the reins. The camel carries only a simple bridle attached to a headstall ornamented with tassels, little shells or glass ornaments, and surmounted by a bouquet of cock or ostrich feathers. The leader of the file carries, beside, around his neck, a little bell, the monotonous sound of which encourages the band and distinguishes it from other parties.

The camel is made to kneel during the process of loading or unloading. In order to force him into this position they bear upon his halter, crying "Kha! kha!" The animal exhibits more or less docility, though he never obeys without giving vent to groans either pitiful or enraged, by which, as also by certain movements of the head, he shows that he suffers, that he is sufficiently loaded, or that he dreads the fatigue of the journey. When they are traveling in caravans these cries, repeated every morning by each camel, indicate the moment of departure. The animal is retained in the position requisite for loading by doubling one of the front legs together and tying it at the knee, as it could still rise on three legs; refractory animals are fastened thus by two legs. The camel makes four sudden jerks in sitting, which he does by elevating his hind-quarters first, thus putting his rider or burden in an angle of forty degrees. Great caution, then, is requisite to prevent a dangerous fall. Only a quarter of an hour is required for loading, when the camel rises slowly and commences his journey. The driver, walking behind or at his side, urges him forward by crying, "Da! da!" When it becomes requisite to turn the animal to the right or left, it is done by pulling his tail in the opposite direction, and he obeys the movements as a vessel does the action of the rudder.

When a caravan is very numerous, people of the same country or tribe unite and form distinct groups, who journey separately at trifling distances from each other. The column is allowed to spread in proportion to the safety of the route, but is kept close and compact where the converse is the case.



ARABIAN CAMELS.

In most instances camels follow their guide or leader of the file, attached to one another by means of a rope fastened behind the pack-saddle of the one, to the headstall of the other.

A caravan en route, or rather a tribe journeying, presents a most picturesque appearance. The camels carry the tents, cooking utensils, and pro-

visions. Others bear canopies of linen or brilliant colored stuffs, on light frameworks made of wood or palm branches. Under these dais repose the women, children, invalids, and oftentimes the young camels which are unable to endure the fatigue of the journey. The men ride barebacked upon the rear ranks of the non-laden camels, and many enjoy tranquil slumber, undisturbed by fear of falling from their perilous position. The chiefs, on horseback, follow or escort the caravan, and men, on foot or mounted on asses, are scattered here and there the whole length of the file, according as occupation or inclination leads them.

During winter the caravan pursues its way from morning till night without stopping; but in summer a few hours, during the hottest portion of the day, is consecrated to repose. In any case the average number of hours in the day's journey does not exceed ten.

During the journey, the camel looks around for the pasturage he likes, and, by elongating his neck, browses upon it without discontinuing his march. At the evening halt, a locality as rich in pasturage as can be found is selected, the bags and all the luggage of the caravan are deposited in order, and piled around in a circle; the camels separate in search of pasturage, but are kept in sight by the drivers, who fasten their forefeet as a security against their wandering too far away. While the camels are browsing, their driver goes to fill the leathern bottles at the well or spring, if there be one in the locality; if not, the poor animals' only resource is patience.

The camel pays no heed to his rider, pays no attention whether he be on his back or not, walks straight on when once set agoing, merely because he is too stupid to turn aside. Should some tempting thorn or green branch allure him out of the path, he continues to walk on in the new direction, simply because he is too dull to turn back into the right road. He is from first to last an undomesticated and savage animal, rendered serviceable by stupidity alone.

In addition to its value as a beast of burden, the camel is also esteemed by the natives of many countries on account of its milk and flesh, while its hair is woven into **ropes** and cloth, and in some parts of India its bones are used instead of ivory for inlaying and decorative purposes.

The Bactrian camel of Central Asia is distinguished from the Arabian species, not only by its double hump, but likewise by its inferior height, stouter and more clumsy build, shorter legs, and harder and shorter feet, as well as by the greater length and abundance of the hair. This animal is, indeed, in all respects, better adapted for a rocky and hilly country than its

southern relative; its shorter and stouter limbs rendering it far less liable to accidents in traversing precipitous ascents. The largest development of hair occurs upon the top of the head, the neck and shoulders, the upper part of the fore-limbs, and the humps.

The Bactrian camel feeds chiefly upon the saline and bitter plants of the



A BABY CAMEL.

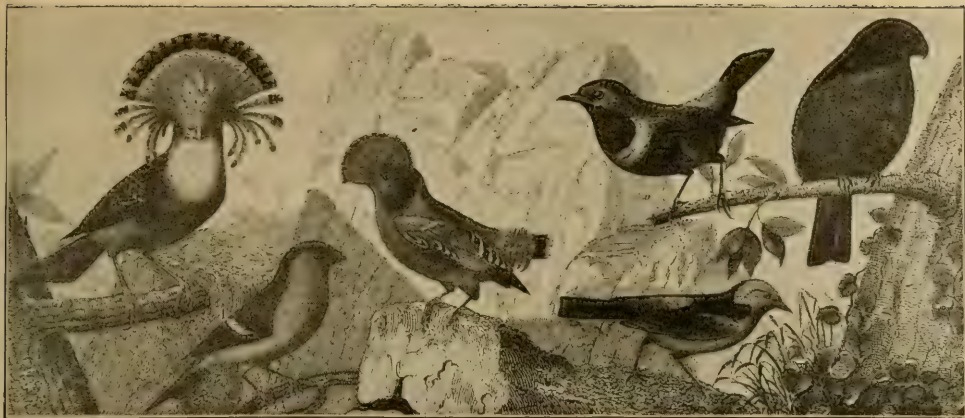
steppes which are rejected by almost all other animals; and displays a curious partiality for salt, drinking freely at the brackish water and salt lakes, which are so common throughout its habitat. Instead of confining itself to a strictly vegetable diet, the Bactrian camel will, when pressed by hunger, readily devour almost anything that it may come across, including felt-blankets, bones and skins of animals, flesh and fish.

The riding camels are a different breed from those used to carry merchandise, and a swift camel is as highly prized by an Arab as a good horse is prized by Americans or Europeans. The speed of these riding camels considered in connection with their endurance is something remarkable. Egyptian camels have been known to travel a hundred and twenty miles a day. They can go a hundred miles a day easily, and there are authentic cases in Africa of messages having been sent a thousand miles in ten days by camel.

The swiftest breed of the riding camel is known as "El Heirie." The Arabs, in their poetical way of speaking, describe the speed of a heirie something after this manner: "When thou shalt meet a heirie and say to the rider 'Salem Aleik,' ere he shall have answered the 'Aleik Salem' he will be afar off and nearly out of sight, for his swiftness is like the wind."

Although the camel serves its master well, it rarely receives good treatment in return. It is beaten with and without cause. At night its forelegs are tied together while the animal is in a kneeling position, thus preventing it from rising and straying. When it is over-loaded it will not rise, and no amount of beating will make it, although the Arab continues to belabor it with a club, which experience should have taught him is perfectly useless under the circumstances.

While the camel always wears a look of weariness and despondency, it is one of the most tireless of animals, and is fitted by nature to undergo hardships that would kill the average four-footed beast.



THE STORY OF THE JAGUAR.

Once, when in South America, I witnessed an entire village thrown into a state of terror by a jaguar. The animal had been without food for many days, and starvation had made it desperate. It descended upon the village at night, and while prowling around in search of human prey it entered a church, the door of which stood upon.

Early in the morning a priest entered the building when the gaunt and famished creature sprang upon him, killing him instantly. A second priest who followed soon after met the same fate, but a third, warned by the deep growls and the horrible sound made by the animal in crunching the bones of his victims, made his escape and gave the alarm.

In a few moments a large force of natives assembled and surrounded the church, but no one dared to enter, for it was impossible to locate the position of the beast. Finally a venturesome hunter and myself climbed to the top of the building and removed a portion of the roof. We saw the fierce animal crouched over the prostrate body of a priest, which was so frightfully mangled that there was no question the victim was dead. The eyes of the jaguar were shining like balls of green fire. The native hunter and I fired together. My bullet struck the murderous beast in the right eye and the other shot hit him just behind a fore leg. Then the natives rushed in and vented their rage on his dead carcass.

This was an unusual case, for the jaguar will not attack human beings except when he has been provoked or suffering the pangs of extreme hunger. It often happens that the islands which they usually inhabit become flooded, and they are forced to go to the mainland to appease their hunger. At such times there is no more dangerous or desperate brute in the whole animal creation.

The size of the jaguar makes it a formidable enemy, for it is the largest representative of the cat family inhabiting the New World, being somewhat superior in size to the leopard, and having a relatively larger head. It resembles the leopard in the ornamentation of the fur, taking the form of large rosette-like dark spots, enclosing lighter centers; and likewise in the circular form of the pupil of the eye. The spots are, however, considerably larger than in the leopard, the ring of each being usually formed of a number of small spots, while the light center of each rosette contains one or more spots. Moreover, the rosettes are arranged in from seven to eight rows on each side of the body. The ground color of the fur is a rich tan.

The total average length of a full-grown male jaguar is about 6 feet 2 inches, the long bushy tail extending to 2 feet 1 inch, or about a third the length over all. A large example had a total length of 6 feet 9 inches, of which the tail occupied 2 feet 2 inches; while a still larger specimen is said to have measured upwards of five feet from the tip of the nose to the root of the tail.

The range of the jaguar embraces the whole of the country lying between the north of Mexico and Texas and the northern parts of Patagonia, its southern limit coinciding approximately with the 40th parallel of south latitude.

The jaguar is one of the most expert climbers among the larger cats, and I have it that in certain districts of South America, where the forests are subject to inundation, and the trees stand so thickly that the passage from one to another is perfectly easy, the jaguar will sometimes take to a life in the trees, preying upon the troops of monkeys that inhabit the forests. There seems to be no record of its having attacked human beings without provocation, except when nearly starving.

The mode of killing its prey is invariable. Leaping to the back of the victim, the jaguar, by a rapid movement of the fore-paws, twists its head round and breaks its neck.

Its cry, which cannot be correctly described as a roar, is loud, deep, and hoarse, and has been compared to a series of repetitions of the syllables, pu, pu, pu.

A peculiar animosity to the jaguar is displayed in the pampas by its near relative the puma. Where the two species inhabit the same district they are at enmity, the puma being the persistent persecutor of the jaguar, following and harassing it as a tyrant-bird harasses an eagle or hawk, moving about it with such rapidity as to confuse it, and, when an opportunity occurs, springing upon its back, and inflicting terrible wounds with teeth and claws. Jaguars with scarred backs are frequently killed, and others, not long



JAGUAR IN ITS NATIVE FOREST.

escaped from their tormentors, have been easily overcome by the hunters. This is the more remarkable since the puma is an animal of far inferior size and power to its adversary, although what it lacks in power it makes up in agility.

The Gauchos of South America are in the habit of capturing the jaguar with the lasso; and I once witnessed a curious instance of how one of these fierce animals was absolutely paralyzed with fear, induced by a party of hunters who intended to capture it in this manner. These hunters had

started the jaguar in an outlying district of the pampas, and it had taken refuge in a dense clump of dry weeds. Though they could see it, it was impossible to throw the lasso over its head, and after vainly trying to dislodge it, they at length set fire to the reeds. Still it refused to stir, but lay with head erect, fiercely glaring at them through the flames. Finally it disappeared from sight in the black smoke; and when the fire had burnt itself out, it was found dead and charred in the same spot. Livingstone relates how one of the harnessed antelopes of South Africa will lie close among burning reeds until its horns and hair are singed; both these instances being examples of the paralyzing effects of fear, analogous to that which causes a wolf when caught in a pit to lie perfectly still, even under the infliction of severe blows, as if simulating death.

The jaguar is commonly called tiger by European residents of South America.

Next to monkeys, peccaries are a favorite article of diet with the jaguar, but he finds scarcely less difficulty in picking up a peccary than in knocking down a monkey. For the little, active, sharp-tusked peccary is more swinishly dull than is usual even with its swinish relatives, and, being too thick-headed to understand danger, is a very terrible antagonist to man or beast. It seems to care nothing for size, weapons, or strength, but launches itself as fearlessly on a jaguar or an armed man as on a rabbit or a child. So, unless the jaguar can quietly snap up a straggler, he has a small chance with even a small herd of these warlike little pigs.

But it meets a foeman where we should least expect it—in the toothless ant-eater, or ant-lion, the *Tamandhuasu*. When the fierce feline springs upon it, the long muzzled excavator throws itself on its back to meet its antagonist with the arms furnished by nature, and as the jaguar descends the ant-eater closes upon its assailant with its four terrible sets of claws, which tear to the very vitals, and if the jaguar's teeth sink deep into the unprotected throat of the *Tamandu*, it purchases victory only with its life; both perish together; and the *Tapuyas* Indians in Brazil say that they often find the skeletons of the two interlaced, so as to show how they perished.



THE STORY OF THE BUFFALO.

Were a second Col. W. F. Cody to become a scout in the great West, he could not win the title borne by the illustrious "Buffalo Bill," for the innumerable herds of buffaloes of thirty years ago have disappeared. When "Buffalo Bill" shot and brought in hundreds and thousands of buffalo to feed the laborers building the Kansas Pacific railway, and later to the United States troops stationed at the Nebraska and Wyoming forts, the number of buffaloes roaming the western plains was estimated at four or five millions. To-day the total number of buffaloes in the United States does not exceed one thousand. And these few would have been exterminated years ago had they not been given government protection. Such in brief is the story of the most characteristic animal of the great plains.

When the first railroads were built west of the Missouri river, the trains were often stopped by the immense herds of buffaloes which in migrating were crossing the tracks. But these same trains carried many hunters to the region inhabited by the buffalo, and the animal was doomed, for his extirpation was only a question of years.

In 1901 there were but three herds of any size remaining; the one in the Yellowstone National Park, another in Lost Park, Colorado, and a third at Goodnight, Texas. The Goodnight herd is the largest in the country and is supported by the Goodnight estate. A ranch of several thousand acres has been set aside for the herd and great care is taken with the animals to prevent their wandering off and getting shot. A number of the buffaloes are sold

annually and the proceeds are devoted to the support of a school in the town.

While the name by which the animal is generally known is buffalo, the correct name is bison, and by naturalists and scientific men is used solely. In the West, however, the name buffalo has been in vogue for so long a time that it will no doubt continue to be used, while there are any of the animals left to be given a name. The bull buffalo measures about 6 feet at the withers and weighs about 2,000 pounds. This refers to the largest specimens now extant.

In earlier days the range of the buffalo was from the Alleghany Mountains to Mexico and the far Northwest, but by 1840 few were to be found east of the Mississippi and the magnificent animal gathered on the plains of Kansas and Nebraska, although large herds roamed through the Indian Territory and Texas.

I am of the opinion that, if left to itself, the buffalo would have crossed the Sierra Nevada and coast-ranges to reach the Pacific slopes; while it would ultimately have developed into several distinct races according to the climate of the different regions it inhabited. An example of the formation of such a race is afforded, indeed, by the variety known in the States as the mountain, or wood, buffalo. The gradual opening up of the interior of this country, with the advance of civilization, soon, however, put an effectual stop to further increase of the species, and eventually led to its practical extermination.

Of all the quadrupeds that have ever lived upon the earth, probably no other species has ever marshaled such innumerable hosts as those of the American buffalo. It would have been as easy to count or to estimate the number of leaves in a forest as to calculate the number of buffalo living at any given time during the history of the species previous to 1870. Even in South Central Africa, which has been exceedingly prolific in great herds of game, it is probable that all its quadrupeds taken together on an equal area would never have more than equaled the total number of buffalo in this country forty years ago. As an instance of these enormous numbers, it appears that, in the early part of the year 1871, Col. Dodge, when passing through the great herd on the Arkansas, and reckoning that there were some fifteen or twenty individuals to the acre, states from his own observation that it was not less than twenty-five miles wide and fifty miles deep. This, however, was the last of the great herds, and the number of individuals comprising it could not be reckoned at less than four millions. Many writers at and about the date mentioned speak of the plains being absolutely black with buffalo as far as the eye could reach. One man passed through a herd for a distance of upwards of one hundred and twenty miles right on end, in traveling on the Kansas Pacific railroad. Fre-

quently, indeed, trains on that line were derailed in attempting to pass through herds of buffalo, until the engineers learned it was advisable to bring their engines to a standstill when they found the line blocked in this manner.

When I was on the Arkansas river in 1867 the whole country appeared one great mass of buffalo moving slowly to the northward; and it was only when actually among them that it could be ascertained that the apparently solid mass was an agglomeration of numerous small herds, of from fifty to two hundred animals, separated from the surrounding herds by greater or less space, but still



A FAMILY OF AMERICAN BUFFALO OR BISON.

separated. The buffalo on the hills, seeing an unusual object in their rear, started at full speed directly towards me, stampeding and bringing with them the numberless herds through which they passed, and pouring down upon all the herds, no longer separated, but one immense compact mass of plunging animals.

In their periodical journeys across the country in search of water regular tracks were formed by the buffalo, and as the water was approached several

tracks united, with the result that in some places tracks of about twelve inches in width, and from a foot to two feet in depth, may be seen following the level of the valleys; the buffalo in these journeys having always marched in single file. These old buffalo-tracks still remain as a memento of a vanished race, and are now used by the domestic cattle which have supplanted the monarchs of the prairie. After reaching the watering-place, the herd, instead of returning to its original feeding-ground, would wander right and left in search of fresh pastures. When undisturbed in good pasture, buffalo were always in the habit of lying down for a few hours during the middle of the day; and they were at certain seasons fond of rolling either in dust or mud. In districts where salt lakes occurred, the buffalo would resort to them in great numbers. All the great herds were in the habit of moving southwards for a distance of from two hundred to four hundred miles with the approach of winter; and during such journeys it frequently happened that numbers were lost in crossing quick-sands, alkali-bogs, muddy fords, or on treacherous ice. It is stated that in 1867 upwards of two thousand buffalo out of a herd of four thousand were lost in a quicksand; and that an entire herd of about one hundred head perished when crossing the ice on a lake in Minnesota.

I have seen buffalo boldly face the cutting blizzards of the Northwest, instead of turning tail to them after the manner of domestic cattle; although they would at the same time seek such shelter as might be obtainable by retiring to the ravines and valleys. In heavy falls of snow, which lay long on the ground, the buffalo were often compelled to fast for days, or even weeks, together; but they suffered most when the surface of the snow was covered with a thin crust of ice after a slight thaw, as their ponderous weight would drive their feet deep into the snow, and leave them at the mercy of the Indians, by whom they were slain by hundreds when thus helpless.

The method of stalking, or "still-hunting," where the hunter creeps up to a herd and shoots one after another of its members, appears to be one the most deadly modes of hunting the buffalo, owing to the crass stupidity of the animals themselves. The plan adopted was first to shoot the leader, when the remainder of the herd would come and stupidly smell round the body, till another animal assumed the post of leader, and was shot down when it was about to make a move; the same process being repeated almost without end. Riding down, surrounding, impounding, or hunting in snow-shoes were, however, other equally effective methods of destruction.

In captivity the American buffalo breeds freely, not only with its own kind, but also with other species of cattle. In the United States a herd has been

established by crossing bull buffalo with domestic cows; the buffalo cow not producing a hybrid offspring. This hybrid race is perfectly fertile, either with itself or when again crossed with domestic cattle; and it is considered that a strain of buffalo-blood will lead to the cattle in the Northwestern states being better enabled to withstand the blizzards of those districts.

In general the buffalo has no reason to fear any of the other animals that frequent the regions it inhabits, for if an individual should be attacked, the



AMERICAN BUFFALOES, SHOWING METHODS OF HUNTING THEM.

bulls rally to its assistance, and compel the assailant to flee before the blows which they inflict with their armed heads. It is only when wounded by the Indian's arrow, or by the bullet of the white man's rifle, or else from becoming sick from any cause, that this great beast falls a victim to its four-footed enemies. The cunning white wolf is the one it has most to dread; for these stealthy, thick-coated Arabs of the prairies soon ascertain when a buffalo is in

feeble condition, and, banding together, easily pull it to the ground and tear it to pieces. But the buffalo does not succumb to its foes without an effort to preserve its fast-ebbing life. Bold and gallant to the last, staggering to his sole remaining spot of vantage ground, the feeble knees bending beneath the weight of the mighty body—weak with loss of blood, yet still unconquered—the noble bull tosses his fierce-looking head and bids defiance to his lurking foes. With eager, bloodshot eyes, and the keen white fangs glistening in their powerful jaws, the wolves set on him from every side. By sudden springs they seize and tear his flesh with their sharp teeth, darting away too quickly to be injured by horn or hoof. Vain are his efforts to reach the nimble assailants, until, summoning all his remaining strength, he rushes upon one that, more daring than the rest, attacks him in front, and even in the act of trampling him down, falls upon the body of his prostrate foe, too feeble to carry out the unequal combat. Never will he rise again, for instantly the angry wolves fairly swarm upon him, and soon nothing will be left to tell of the mighty buffalo but a well picked skeleton whitening in the summer sun.

Mounted on a swift horse, and armed with a spear and bow and arrows, the Indians killed great numbers of these animals. They rode up close to the buffalo, and with the greatest apparent ease buried an arrow up to its feather in the creature's body. Indeed many instances are known where the slight Indian bow, drawn without any perceptible effort, has thrown the arrow completely through the body of the huge animal. Many modes of destroying this animal were in vogue among the Indians and white settlers. The skin was so valuable that every exertion was made to procure it. Of the buffalo's hide they made their wigwams or tents, their shields, their robes, their shoes, etc. The Indians could also sell the hides to the traders for a considerable sum, so that an Indian would almost measure his importance and wealth by the number of hides that he took.

Their ferocity of appearance was not evident in the buffaloes' true nature, for their disposition was sluggish and fearful. Endowed with the smallest possible amount of instinct, the little the buffalo has seems adapted rather for getting him into difficulties than out of them. If not alarmed at the sight or smell of a foe, he will stand stupidly gazing at his companions in their death-throes, until the whole herd is shot down. He will walk unconsciously in a quicksand or quagmire already choked with struggling, dying victims. Having made up his mind to go a certain way, it is almost impossible to swerve him from his purpose.

The flesh of the buffalo is tolerable eating, but the "hump" is unapproach-

able in delicacy. It is exceedingly tender, and possesses the property of not cloying even when eaten in excess. The fat is devoid of that sickening richness which is usually met with in our domesticated animals.

The cow is smaller than the bull, and considerably swifter. She is also generally in better condition and fatter than her mate, and in consequence the hunters who went to "get meat" always selected the cows from the herd.

The principal use of the flesh of the buffalo was to make "jerked meat" of it. This is made by cutting the meat into long, narrow slips, and drying



EUROPEAN BUFFALOES FIGHTING.

them in the sun. There is a peculiar art in cutting these slips. The operator takes a large lump of the flesh, and holding his knife firmly in one hand, presses the meat against its edge with the other, continually turning it round and round, until the whole piece is converted into one long strip. The strips thus prepared are pegged out on stakes, as washerwomen peg their clothes, or suspended in festoons on the branches of trees, like red snakes, until they are dry enough to be packed up. Three days is considered sufficient for the purpose. The cow is preferred to the bull for conversion into jerked meat, while the

skin of the bull is more valuable than that of the cow, from the mass of woolly hair about the shoulders.

THE INDIAN BUFFALO.

The Indian buffalo has been domesticated and is extensively employed as a beast of burden by the Hindoos. It has also been introduced into several of the adjoining countries. The animal is about the size of a full-grown ox and is harnessed and driven in a manner similar to that our forefathers used with the ox. This species has enormous curved horns, some measuring 12 and 14 feet from tip to tip.

In a wild state the Indian buffalo is only known in the country from which it takes its name, the herds which are found in a wild state in Burma and the Malay Peninsula and adjacent islands being not improbably descended from animals escaped from captivity.

In India wild buffaloes are found on the plains of the Bramaputra and Ganges, from the eastern end of Assam to Tirhut; they also occur in the "terai" land at the foot of the Himalaya. Domesticated buffaloes are found not only over the whole of India and Burma, and the greater part of the Malayan region, but have likewise been introduced into Asia Minor, Egypt and Italy.

The haunts of the wild Indian buffalo are the tall grass-jungles found in many parts of the plains of India, and generally in the neighborhood of swamps; but it may be also found more rarely in the open plains of short grass, or among low jungle, and occasionally even in forest. Those who have never had the opportunity of seeing an Indian grass-jungle can have but little conception of its height and density, but some idea may be formed of it from the fact that in such cover, although a herd of buffaloes may be roused within a score of yards, the waving of the grass, and perhaps the glint of a polished horn-tip, is the only ocular evidence of the presence of the animals: the probably nearly noiseless rush might be caused by other animals; and where the horns have not been seen it is only by the strong, sweet bovine scent—similar to but much more powerful than that of cows—that one can be absolutely certain of what is in front of one. In such jungles shooting on foot is out of the question, and the only method of procedure is by beating with a line of elephants.

In their wild state these buffaloes are always found in herds, which may comprise fifty or more individuals. They feed chiefly on grass, in the evening, at night, and in the morning; and lie down, generally in high grass, not

unfrequently in a marsh, during the day; they are by no means shy, nor do they appear to shun the neighborhood of man, and they commit great havoc among growing crops. Sometimes a herd or a solitary bull will take possession of a field and keep off the men who own it. A bull not unfrequently attacks without provocation, though (probably on the principle that a council

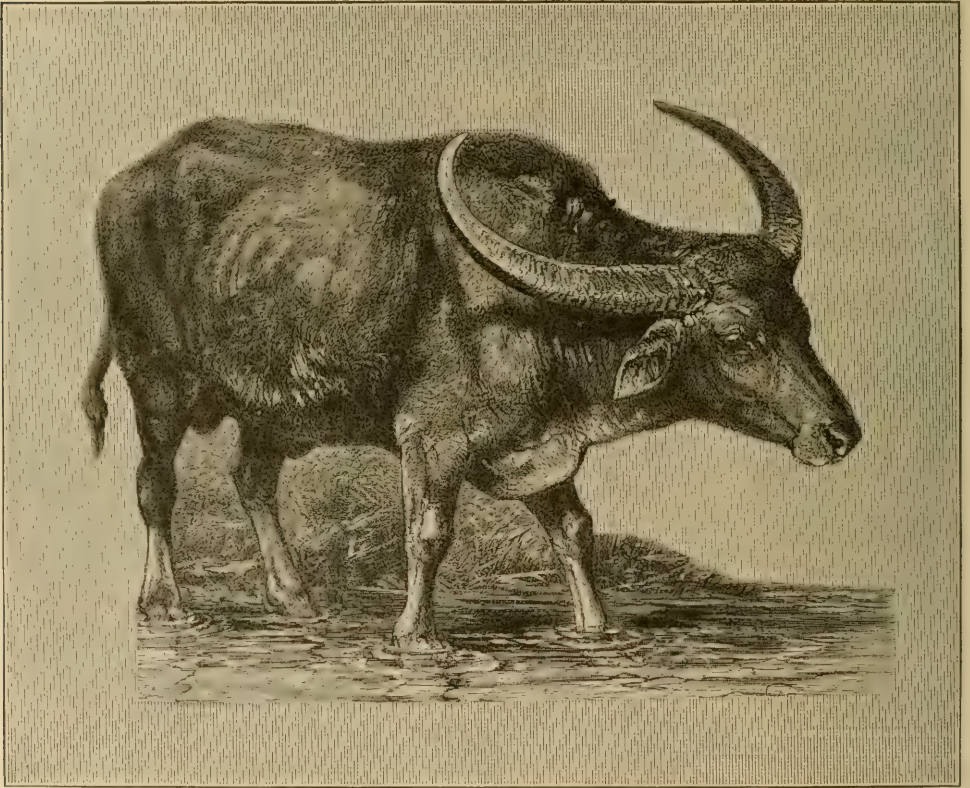


THE ARNÉE BUFFALO OF ASSAM.

of war never fights) a herd, although all will gallop to within a short distance of an intruder and make most formidable demonstrations, never, I believe, attacks any one who does not run away from them. A wounded animal of either sex often charges, and has occasionally been known to knock an elephant down. Buffaloes retain their courage in captivity, and a herd will

attack a tiger or other dangerous animal without hesitation, and, although gentle with those they know and greatly attached to them, they are inclined to be hostile to strange men and strange animals.

In earlier times the buffalo was common throughout Europe, but the advance of civilization there as in this country later drove the animal back, until the present time it is restricted to a few of the most inaccessible mountain regions.



COMMON INDIAN BUFFALO.

The buffalo now living in Lithuania are specially protected by the Russian Government and are under the charge of a staff of keepers, but those of the Caucasus are thoroughly wild. Although living at a greater altitude, and thus exposed to a more intense cold, the buffalo of the Caucasus are less thickly haired than are those of Lithuania. Buffalo were abundant in the Black Forest in the time of Julius Cæsar, and as late as the ninth and tenth

centuries were sufficiently numerous in parts of Switzerland and Germany to be used as food. In a recent summary of the history of the species I found that up to 1500 the European buffalo seems to have been common in Poland, where it was looked upon as royal game, and hunted in right royal manner by the king and nobility, as many as two thousand or three thousand beaters being employed to drive the game.



CAPE BUFFALOES.

In spite of their size and bulk, the European buffalo are active animals, and can both trot and gallop with considerable speed. In galloping the head is carried close to the ground and the tail high in the air. Generally they are sly and retiring in disposition, but in Lithuania an old bull has been known to take possession of a road and challenge all comers. The female dis-

plays great courage in defending its offspring against bears and wolves, and cows often sacrifice their lives in behalf of their calves.

THE CAPE BUFFALO.

The Cape buffalo is a native of South Africa. It is exceedingly ferocious and cunning, often lurking among the trees until an unsuspecting traveler approaches, and then rushing on him and destroying him. The ferocious creature is not content with killing its victim, but stands over him mangling him with its horns, and stamping on him with its feet.

The Cape buffalo has but two enemies—the lion and man; and the combined assaults of these two have in some districts so reduced its numbers that as far back as 1875, where there were formerly herds of from ten to one hundred in number, not ten head are to be found. A combat between three lions and a bull buffalo was once witnessed by me. After a game fight the buffalo was vanquished. The bulls frequently engage in fights between themselves. I had the good fortune to witness one of these. On looking through the edge of a thicket which concealed them I saw two buffalo bulls standing facing each other with lowered heads, and, as I sat down to watch, they rushed together with all their force, producing a loud crash. Once their horns were interlocked, they kept them so, their straining quarters telling that each was doing his best to force the other backwards. Several long white marks on their necks showed where they had received scratches, and blood dripping down the withers of the one next me proved that he had received a more severe wound. It was a magnificent sight to see the enormous animals, every muscle at its fullest tension, striving for the mastery. Soon one, a very large and old bull, began to yield a little, going backwards step by step, but at last, as if determined to conquer or die, it dropped on its knees. The other, disengaging his horns for a second, so as to gain an impetus, again rushed at him, but did not strike him on the forehead, but on the neck, under the hump, and I could see that with a twist of his horns he inflicted a severe wound. Instead, however, of following up his advantage, this one withdrew and gave up the battle. Had he pressed his advantage he would eventually have won.



STORY OF THE ARMADILLO.

In Central and South America dwells a little creature that might properly be called an animal battleship. It is the armadillo, and as may be inferred from its Spanish name it is protected by heavy armor which covers it so completely that by drawing in its head and legs no part of its person is exposed except the tail.

While riding over the pampas, accompanied by several gauchos (which are the native cowboys) I had a severe fall by reason of my horse stepping into an armadillo's burrow. An examination of the ground showed me that there were numerous burrows in the soft earth, but so cleverly concealed that they could only be discovered by searching for them.

All armadillos burrow in the ground; and so rapid is the act of burrowing, that, as the writer has witnessed, if a horseman sees one of the animals, it is almost necessary for him to tumble off his horse in order to capture it before it disappears in the soft soil of the pampas.

Though its claws are not of very great size, they are yet most formidable weapons, and an armadillo, if brought to bay, will sometimes use them upon its foe with terrible effect, rolling over upon its back, and striking so fiercely and rapidly at its enemy with its armed feet as often to inflict very severe wounds.

It is not very easy, however, to bring an armadillo to bay, for its smaller

claws give it so great an advantage that it can run with wonderful speed, and, if not quickly overtaken, is sure to make its escape into its burrow, whence it cannot be turned out except by many an hour of hard digging. And its ears, moreover, are so sharp that a hunter finds it very difficult even to catch sight of the wary little animal, so that nature has furnished it with very useful means of protection from its foes.

Sometimes, however, before they can become quite concealed, they are

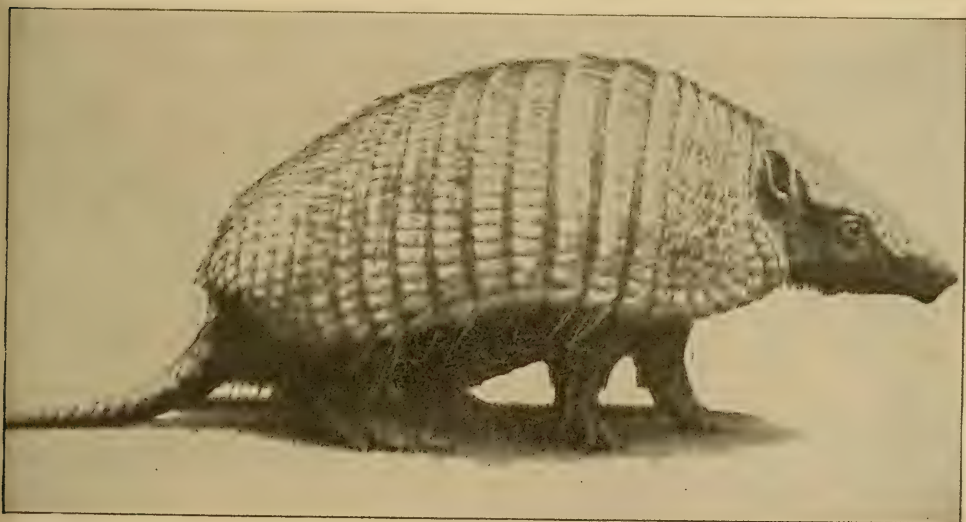


METHODS OF HUNTING THE ARMADILLO.

caught by the tail; and then they resist so powerfully, that the tail often breaks short off, and is left in the hands of the pursuers. To avoid this the hunter has recourse to artifice; and, by tickling the animal with a stick, it looses its hold, and suffers itself to be taken without further trouble. When caught, the armadillo rolls itself into a ball, and will not again extend itself unless placed near the fire.

These animals are hunted with small dogs, which are trained for this purpose. The hunters know when they are concealed in their holes, by the number of flies which then hover round; and their usual mode of forcing them out is by smoking the burrows, or pouring in water. If they begin to dig, the animal digs also; and by throwing the earth behind it, so effectually closes up the hole, that the smoke cannot penetrate.

A moonlight night is the best time to hunt armadillos for they are then abroad searching for food—ants, mice, worms, larvae, insects, birds eggs and snakes, besides many different vegetable fibres. The hunter needs no weapon but a stout club, and no assistant but a good dog.



THE PELUDO OR BROWN-HAIRED ARMADILLO.

As soon as the armadillo perceives the dog, it either makes straight for its burrow, or endeavors to bury itself by digging a hole where it stands. If the dog come up with the creature before it gain its retreat, its fate is sealed. As the shell which covers the upper part of its body affords no hold, the dog generally seizes the armadillo by the head, or a paw, and holds it till the arrival of his master, by whom it is despatched with a blow on the head from his stick. A specially clever dog will, however, endeavor to overthrow the armadillo as it runs by thrusting his nose under the edge of the shell. The creature is then promptly seized by the soft under-parts, and soon killed.

The bony covering which is such a powerful means of defense to the

armadillo is sometimes used as a weapon of attack. I once saw an armadillo kill a snake by rushing upon it and using the jagged edge of its armor as a saw. The reptile was sawed into pieces. The struggles of the snake were all in vain, as its fangs could make no impression upon the panoply of its assailant; and eventually the reptile slowly dropped and died, to be soon after devoured by the armadillo, which commenced the meal by seizing the snake's tail in its mouth, and gradually eating forward.

Despite its diet, the flesh of the armadillo has a pleasant flavor, and the natives are very fond of them baked in the shell.

The armadillo are all small, except the gigantic armadillo, which is but rarely found. There was a great commotion in our camp one day and on investigating I found that an armadillo of gigantic size had caused the commotion. It was lying, a round, misshapen mass, its head partly buried under its armor, the feet drawn together, and its body pierced by numerous arrows. It offered not the slightest resistance to its tormentors, whom I desired to end its sufferings by a heavy stroke of a club. Two men were required to carry it. It weighed one hundred and twenty pounds; its height was about three feet, its length five and a half. Its tail was about fourteen or sixteen inches long, and its root nearly as thick as a man's thigh, tapering very abruptly. The middle one of the five toes of the fore-foot was seven and a half inches in length. In size it greatly surpasses the largest giant armadillo known.



THE STORY OF THE LYNX.

In my various travels I have met and studied no less than twenty species of lynx. The true lynx, that makes its home in Europe and northern Africa, is the best representative of the general class, but the American species have many similar characteristics.

The body is always marked with small black spots during the summer. In some instances, perhaps in young animals only, these spots continue during the winter. This, however, appears to occur only among the lynxes of Europe; those of Asia having the winter dress without spots, except on the flanks and limbs, while they may be also wanting there. The hairs of the fur vary in color in different parts of their length, and are tipped with black. The ears are gray on the outsides, with black margins, tips, and tufts. Occasionally the under-parts of the body are spotted. The length of a full-grown lynx is thirty-three inches, exclusive of the tail, which measures only seven and three-quarters inches; but the length of the head and body may be upwards of forty inches.

When taken young, the lynx can be easily tamed. I saw a full-grown tame Thibetan lynx in the possession of the governor of Ladak, in Leh, and another in Calcutta. Both specimens were very playful, although the former would occasionally be somewhat too free with its claws. It displayed marvellous agility in capturing the half-wild pigeons which abound in Leh,

In Ladak, where the lynx is a rare animal, but seldom seen by Europeans, its chief food appears to consist of the blue hares which occur in swarms in many of the higher valleys. One summer when shooting at a high elevation near Hanle, in Spiti, I suddenly came upon a female lynx with two cubs. I shot the mother, and as the cubs concealed themselves among some rocks, I barricaded them in, and went on with my hunting. On arriving in camp, I sent back men to try and catch the cubs; in this they succeeded, and brought them back to me. They were about the size of half-grown cats, and more



THE CARACAL OR DESERT LYNX.

spiteful, vicious little devils cannot be imagined; they were, however, very handsome, with immense heads and paws. For two or three days they refused all food, but at the end of that time they fed quite ravenously from the hand.

The Canada lynx is a native of North America, and is remarkable for its gait. Its method of progression is by bounds from all four feet at once, with the back arched. It feeds principally on the American hare, as it is not courageous enough to attack the larger quadrupeds. Its length is about three

feet. The Indians sometimes eat its flesh, which is white and firm, and not unlike that of the American hare itself. Its skin forms an important article of commerce, and between seven and nine thousand are exported annually by the Hudson's Bay Company.

The pardine or Southern European lynx is, perhaps, the handsomest representative of the entire group, its fur being distinctly spotted at all seasons



THE CANADA LYNX.

of the year. The color of the body is yellowish above, and white beneath; the rounded black spots occurring on the body, tail and limbs. From the examination of the skin alone I regard this animal merely as a southern spotted variety of the common lynx, analogous to the spotted and banded southern varieties of the American bay lynx. An examination of the skull showed, however, some differences from that of the northern lynx.

This lynx is found in Europe in Spain, Sicily, Sardinia, Greece and Turkey. Its habits are probably very similar to those of the northern species.

The foxy-colored cat known as the caracal is a species of lynx, and agrees with the latter in its long limbs, penciled ears, and the characters of its teeth; but in its longer tail, absence of a ruff round the throat, and less close and thick fur, it resembles the caffre-cat. The transition from the typical cats to the lynxes is, therefore, complete. The caracal is sometimes called the desert lynx.

In addition to its long limbs it is characterized by its slender build, the length of the tail being equal to one-third of that of the hind leg and body, and by the long tufts of black hair surmounting the long ears. The length of the head and body varies from 26 to 30 inches, and that of the tail from 9 to 10 inches; the height at the shoulder being from 16 to 18 inches.

This species is sometimes known as the Persian, and at others as the red lynx, but the latter name is properly applied to a North American variety of the true lynx. Although a rare animal everywhere, the caracal is spread over the greater part of India, with the exception of Bengal, the Malabar coast, and the Eastern Himalaya. It is unknown to the eastward of the Bay of Bengal, but towards the southwest it is found in Mesopotamia, and perhaps the Persian highlands. It is also found in Arabia; and over a large portion of Africa it is the sole representative of the lynxes.

We have little or no information as to the habits of the caracal in Africa, and only a scant record of its mode of life in India. I know, however, that it dwells among grass and bushes, rather than in forests. Its prey consists largely of gazelles, the smaller species of deer, hares, pea-fowl, florican, cranes, and other birds; and so active is the creature, that it has the power of springing up and capturing birds on the wing at a height of five or six feet above the ground. The caracal is easily tamed, and in some parts of India is trained to capture several of the animals mentioned above as forming its natural prey. It is a favorite amusement among the natives to let loose a couple of tame caracals among a flock of pigeons feeding on the ground, when each of them will strike down as many as ten birds before the flock can escape. It is believed that the expression "lynx-eyed" owes its origin to this species.



STORY OF THE ELEPHANT.

Everybody knows that the elephant is the largest of living animals, that his tusks are ivory and that he has enormous strength. Many other things the reader knows of this big beast, and yet this story is written for the purpose of describing scenes and incidents, in which I took a prominent part, new and novel to you. The years I lived in India and along the upper Nile have made me familiar with the animal and have given me an opportunity to study him in nature's domain. The elephant in captivity undergoes many changes in disposition and act.

The deep and widespread interest in the elephant, which surpasses that accorded any other animal, is not misplaced, since the elephant is without exception the most extraordinary of the brute creation. The name pachyderm is frequently used in describing the elephant, but it is no more applicable than would be a half dozen others. Pachyderm means thick-skinned, and describes one quality of the animal, for the skin of the elephant is thicker and tougher than that of any other of the animals with the exception of the rhinoceros and the hippopotamus.

Much has been written about the size attained by the elephant, but nothing is positively known, for no animal in captivity will attain the growth it will in its native state, and it is plain that there may be larger elephants still in the forest and jungle than were ever killed by the European hunters. The fact that tusks larger than those ever found by the white hunters are often brought to the coast by the natives of Africa give evidence of this.

Jumbo, over eleven feet in height at the withers and weighing over six and one-half tons, was raised in captivity at London and was in this country for several seasons. He was the chief attraction at a circus while on this side of the Atlantic. He was without doubt the largest specimen ever in this country, but I have seen a number larger and heavier both in Africa and in Ceylon and Bengal. The height of the African elephant, which is considered larger than the Asiatic, is probably never over fifteen feet, and his weight is certainly not more than eight or nine tons. His length of body is in some instances over thirty feet.

The dimensions of the tusks vary greatly, and the maximum length is only approximately known. Several specimens measuring over twenty feet were brought me by natives, who declared they had seen much longer ones. One of these tusks weighed between two hundred and three hundred pounds.

The tusks of the elephant furnish exceedingly fine ivory, which is used for various purposes, such as knife-handles, combs, billiard-balls, etc. There is a great art in making a billiard-ball. Some parts of the tusk are always heavier than others, so that if the heavy part should fall on one side of the ball, it would not run true. The object of the maker is either to get the heavier portion in the center, or to make the ball from a piece of ivory of equal weight. In either case, the ball is made a little larger than the proper size; it is then hung up in a dry room for several months, and finally turned down to the requisite dimensions.

It is of course impossible to obtain any accurate data as to the age which the elephant may attain in its wild state, and can only, therefore, suggest an approximation to what this may be from captive specimens. Although full grown at the age of twenty-five, an elephant, as determined by the condition of its teeth, is not then mature. A female captured in Coorg in 1805, when about three years of age, did not appear to be particularly old-looking in 1898, although she had then passed her prime. Other individuals have been known to live in captivity for over a century; and since it is obvious that the artificial mode of life which prevails in this state cannot be one tending to promote longevity, it is probable that the estimate of a century and a half as the duration of life in the wild state is not excessive.

In India each elephant has his own individual master or keeper, and a great attachment often springs up between the beast and his human friend. In many cases when the keeper falls ill or is killed, the elephant must be killed, for he will not obey any one else. Some of the tamed animals refuse to take instructions from any one but their master, and the intelligence

shown is almost human. It is believed that the elephant has a small nerve center located in the brain and that in this peculiar formation is the seat of his intelligence. He is the only animal to possess this unusual mass, which corresponds to the human ganglion.

Long periods are required to complete the course of instruction, but when once mastered, the elephant is capable of doing many things which are of great use to man. It has been shown that the animal is used for many



FEMALE INDIAN ELEPHANT.

purposes, but when out of humor he will refuse to work and often proves destructive, rather than beneficial. Kipling, who wrote probably the best fiction ever printed regarding the elephant, has a number of stories which describe certain traits of the animal. In his story of "Moti Guj, Mutineer," he relates how the keeper of an elephant wanted to take a vacation. He arranged to return on the ninth day, and when the time for departure came he

struck the elephant on the foot nine times to indicate the number of days he would be absent. During the nine days the elephant performed his regular duties under the guidance of another keeper, but when the master failed to return on the tenth day, Moti Guj rebelled and refused to work. Not only did he absolutely refuse to perform his regular duties, but he went among the other elephants and induced them to go on a strike. There was a general revolt, and the police elephants, which are kept on all the large Indian plantations for the purpose of chastising unruly members of the band, were sent out to subdue the leader of the rebels. But Moti Guj showed fight and he finally overpowered and drove back the police. The herd was on a rampage the remainder of the day, but the following morning the keeper returned and Moti Guj was set to doing hard tasks. He accepted the situation cheerfully.

During one of the wars in India I had an opportunity of observing one of the elephants that had received a flesh wound from a cannon-ball. After having been two or three times conducted to the hospital, he always used to go alone to have his wound dressed.

The domesticated elephant is largely employed in India for the transport of heavy camp-equipage, for dragging timber to the rivers, and in lieu of horses for artillery; and is of especial value in traversing districts where roads are either wanting, or are so bad as to be impassable for other animals when laden. Elephants may be employed either as beasts of burden or of draught. In dragging timber of moderate dimensions, a short rope is attached to one end of each log, which the elephant seizes between his teeth, and thus raising his burden from the ground, half carries and half drags it away. Tuskers are both stronger and more useful than females, since their tusks often aid them in the performance of their duties.

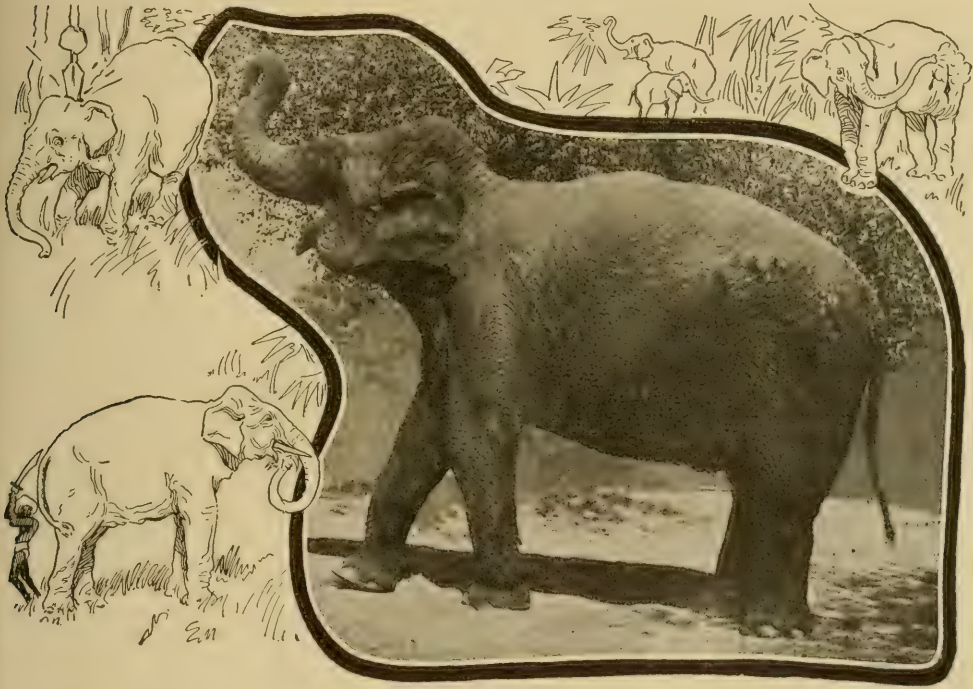
The majority of the animals employed in tasks like the above, belong to what the natives term the inferior castes; tuskers of the finest and most approved form being far too expensive to be put to such uses. The majority of such animals are, indeed, purchased by the native princes, by whom they are used in state pageants, and the taller the animal, the greater his value.

In India these animals were formerly employed in the launching of ships. An elephant was directed to force a very large vessel into the water; but the work proved superior to his strength. His master, in a sarcastic tone, bade the keeper take away this lazy beast, and bring another. The poor animal instantly repeated his efforts, fractured his skull, and died on the spot.

A story is related of an elephant having formed such an attachment for a very young child, that he was never happy but when the child was near

him. The nurse frequently took it in its cradle, and placed it between his feet. This he at length became so much accustomed to, that he would never eat his food except it was present. When the child slept, he would drive off the flies with his proboscis; and when it cried, would move the cradle backward and forward, and thus rock it again to sleep.

A sentinel belonging to the present menagerie at Paris, was always very careful in requesting the spectators not to give the elephants anything to eat. This conduct particularly displeased the female, who beheld him with



INDIAN ELEPHANT, TRUMPETING.
(Showing methods of hunting it.)

a very unfavorable eye, and several times endeavored to correct his interference, by sprinkling his head with water from her trunk. One day, when several persons were collected to view these animals, a bystander offered the female a bit of bread.

The sentinel perceived it; but the moment he opened his mouth to give his usual admonition, she, placing herself immediately before him, discharged in his face a considerable stream of water. A general laugh ensued, but the

sentinel, having calmly wiped his face, stood a little to one side, and continued as vigilant as before. Soon afterwards, he found himself under the necessity of repeating his admonition to the spectators; but no sooner was this uttered than the female laid hold of his musket, twirled it round with her trunk, trod it under her feet, and did not restore it till she had twisted it nearly into the form of a screw.

At Macassar, an elephant driver had a cocoanut given him, which, out of wantonness, he struck twice against his elephant's forehead, to break. The day following the animal saw some cocoanuts exposed in the street for sale; and taking one of them up with his trunk, beat it about the driver's head, and killed him on the spot.

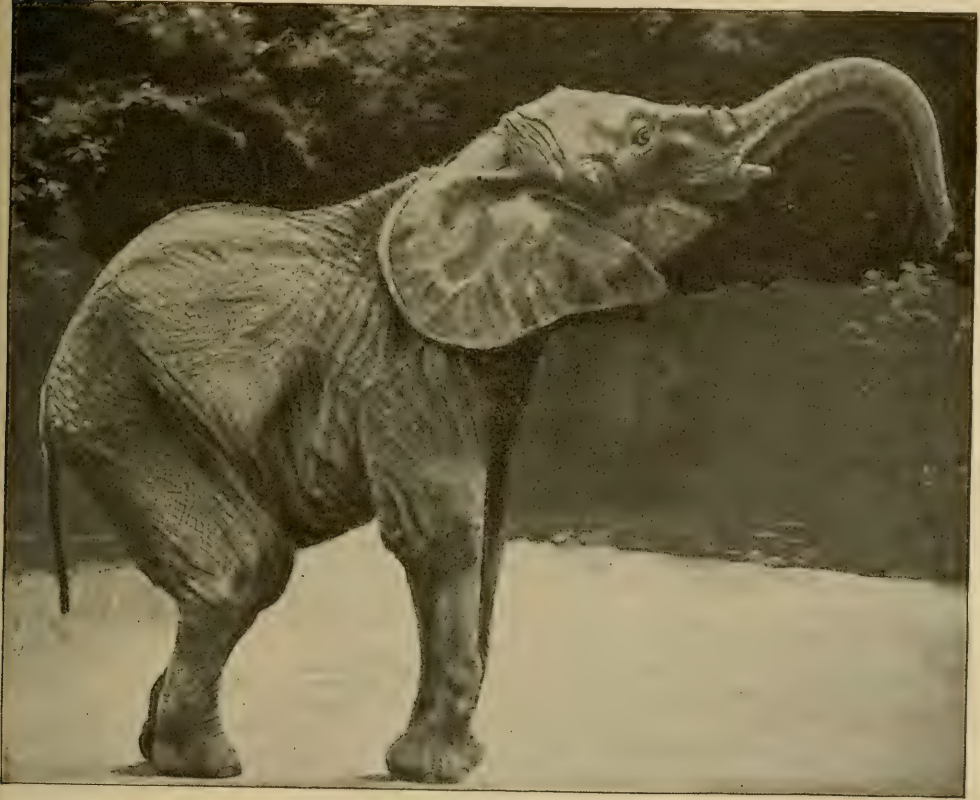
A tame elephant, kept by an officer in India, was suffered to go at large. The animal used to walk about the streets in as quiet and familiar a manner as any of the inhabitants; and delighted much in visiting the shops, particularly those which sold herbs and fruit, where he was well received, except by a couple of brutal cobblers, who, without any cause, took offense at the generous creature, and once or twice attempted to wound his proboscis with their awls. The noble animal, who knew it was beneath him to crush them, did not disdain to chastise them by other means. He filled his large trunk with a considerable quantity of water, not of the cleanest quality, and advancing to them, as usual, covered them at once with a dirty flood. The fools were laughed at, and the punishment applauded.

I have had experience with both the African and the Indian elephant and know the former to be the more dangerous animal of the two, and the one that is more ready to charge. The females, especially those that are barren and have small tusks, are far more dangerous than males, frequently charging without the least provocation, even when unwounded; and hunters will sometimes take the trouble to kill one of these worthless females before attacking the tuskers. I am of the opinion that the greater number of accidents that have occurred in African elephant-shooting may be set down to females.

The intrepid Arabs of the Soudan slay the elephant in the same manner as the rhinoceros, by hamstringing it with a long two-edged sword. Three or four mounted hunters, singling out a tusker and separating it from its fellows, follow it until, tired out, the animal faces its pursuers, and prepares to charge. Directly it does so, the hunter who is the object of the charge puts his horse to a gallop, and is closely followed by the elephant. Thereupon, two of his companions follow at their best pace behind; and as soon as

they come up with the fleeing animal, one seizes the reins of the horse of his fellow, who immediately leaps to the ground, and with one blow of his huge sword divides the tendon of the elephant's leg a short distance above the heel. The ponderous beast is at once brought to a standstill, and is at the mercy of its aggressors.

A somewhat similar method was formerly practiced in Mashonaland, only



AFRICAN ELEPHANT.

there the hunters went on foot, and their weapon was a broad-bladed axe; with this they crept up behind a sleeping elephant, and severed the back tendon of the leg in the same manner as above.

Other tribes in the same district employ a heavily-weighted spear, which is plunged into the animal's back by a hunter seated on a bough overhanging one of the most frequented pathways. On receiving the weapon, the elephant

of course immediately rushes off, and the weight of the spear, aided by blows from boughs, soon so enlarges the wound, that the animal quickly sinks to the ground, exhausted from loss of blood. In other districts, as in parts of Equatoria, the weighted spear is suspended from a horizontal bar fixed between two tiers of poles. The spear or knife is kept in position by a cord, which is held down by a stake that is directed horizontally toward the middle of the trap; and by another which, at a convenient angle, is interposed between this and the end. The animal, striking with his feet, loosens the contrivance, which then falls violently; the knife wounds the animal with singular exactness in the spot where the brain unites with the nape of the neck. The blow falls like a thunder-clap; and if the trap is well made, the elephant struggles and dies.

The European sportsman kills the African elephant either by lying in wait at one of its drinking-places, or by attacking it in the open, either on foot or on horseback. At the present day, however, most or all of the elephants remaining in South-Eastern Africa are restricted to districts infested by the tsetse fly; where horses cannot exist, and the pursuit must consequently be undertaken on foot. Owing to the conformation of its skull, the front-shot, so frequently employed in the case of the Indian elephant, is ineffectual with the African species, and there are but two spots where a bullet may be expected to prove fatal; one of these being in the head behind the eye, and the other in the shoulder immediately behind the flap of the ear.

The old bulls are frequently solitary for a time, but generally each belongs to a particular herd, which it visits occasionally. Solitary male elephants are known as "rogues," and are generally characterized by their fierce and quarrelsome disposition. Elephants that are permanently solitary are, however, comparatively rare, the majority of the so-called rogues really belonging to herds. These leave their companions, as a rule, merely for a time, in order to visit the cultivated lands, where the less venturesome females hesitate to follow, and where they inflict enormous damage on the growing crops.

In the kingdom of Siam there are occasionally to be found white elephants, but these are very scarce, and are regarded with much veneration. This is owing to the belief of the Siamese in the doctrine that the souls of men, after their death, pass into the body of some white animal. They imagine that the body of so rare an animal as a white elephant must of necessity be inhabited by the spirit of some king or other mighty personage. They say, that for all his majesty the King of Siam knows to the contrary, the

soul of his father, or some other ancestor, may inhabit the body of one of the white elephants; and, in consequence of this theory, every white elephant, in Siam, has the title of king, is lodged and fed in a very sumptuous manner, and is never ridden, even by the king himself, as the elephant is as great a king as he is.

A curious instance is recorded of the elephant's liking for sweetmeats, and

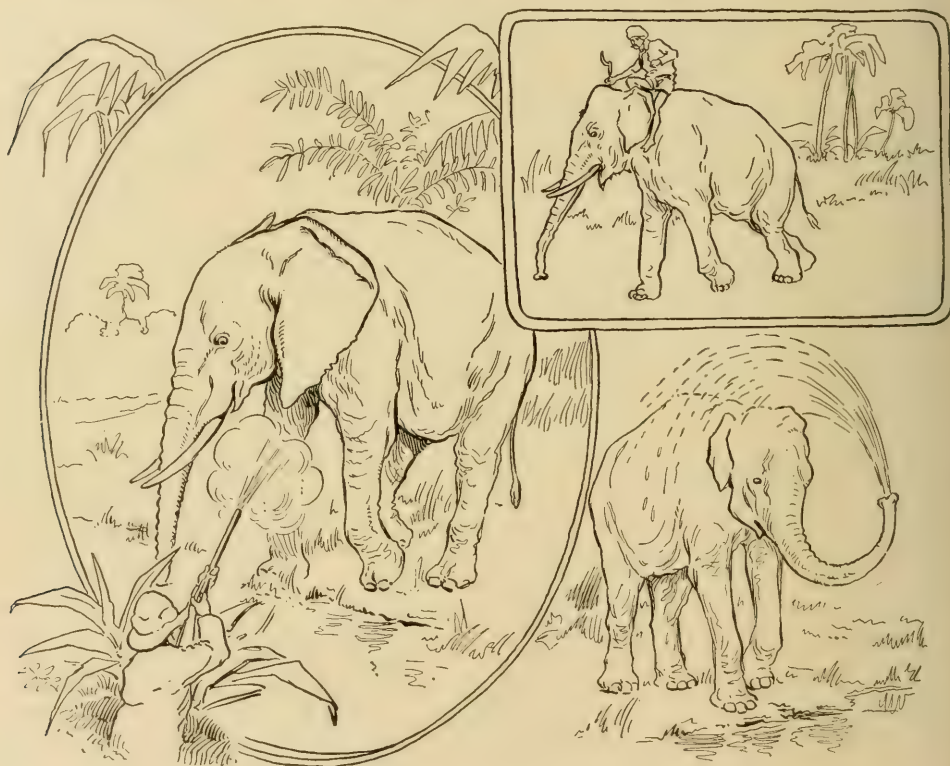


BABY ELEPHANT OF THE SOUDAN.

of a method adopted in his savage state to gratify this propensity. It chanced that a Coolie, laden with jaggery, which is a coarse preparation of sugar, was surprised in a narrow pass in India by a wild elephant. The poor fellow, intent upon saving his life, threw down the burden, which the elephant devoured, and, being well pleased with the repast, determined not to allow any

person to pass either way, who did not provide him with a similar banquet. The pass formed one of the principal thoroughfares to the capital, and the elephant, taking up a formidable position at the entrance, obliged every passenger to pay tribute. It soon became generally known that a donation of jaggery would insure a safe conduct through the guarded portal, and no one presumed to attempt the passage without the expected offering.

No animal is more ferociously destructive than an infuriated elephant;



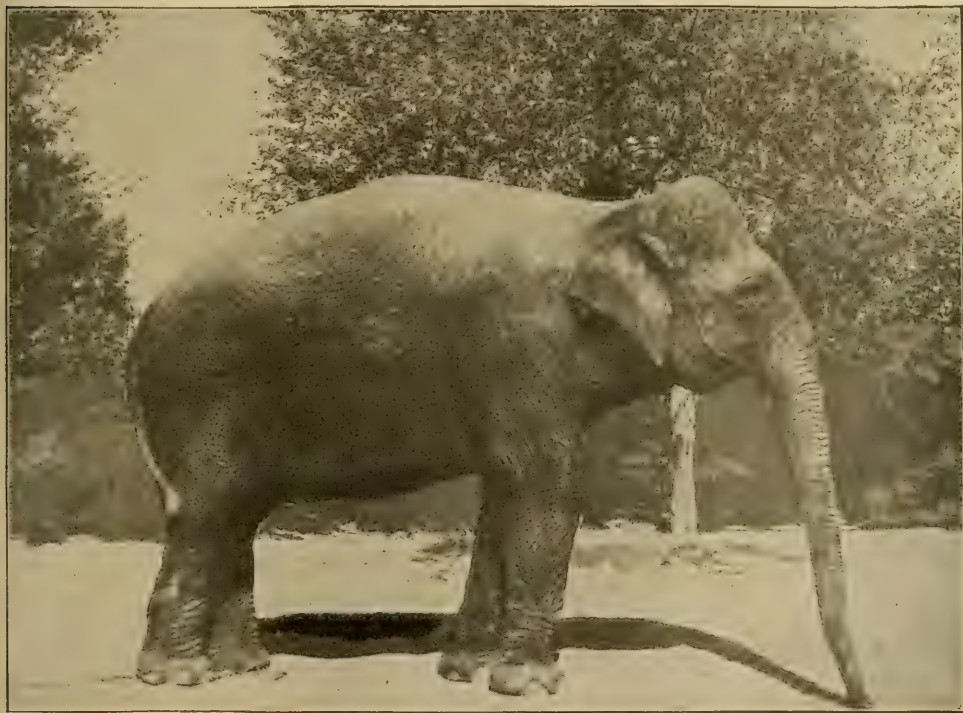
SCENES IN AN ELEPHANT'S LIFE.

even in the domesticated state, they are known to be gratified with carnage, and hence they have been frequently employed as executioners by the despots of the East. One of the Epirote elephants, furious from pain, shook off his driver, and rushing back upon the phalanx which Pyrrhus had formed with closer ranks than usual, crushed and destroyed a great number of soldiers before any remedy could be found for such a disaster.

On a previous occasion the delight of the elephant in carnage had been

fearfully demonstrated. Before the body of Alexandria was laid in the tomb, three hundred of his bravest companions were crushed to death by elephants, in the presence of the entire army, by command of the regent Perdiccas.

An elephant, with a good driver, gives, perhaps, the best instance of disciplined courage to be seen in the animal world. Elephants will submit, day after day, to have painful wounds dressed in obedience to their keepers, and meet danger in obedience to their orders, though their intelligence is suf-



ONE OF MR. SEYMOUR'S HUNTING ELEPHANTS.

ficient to understand the peril, and far too great for man to trick them into a belief that there is no risk. No animal will face danger more readily at man's bidding. As an example, it is told that a small female elephant was charged by a buffalo, in high grass, and her rider in the hurry of the moment, and perhaps owing to the sudden stoppage of the elephant, fired an explosive shell from his rifle, not into the buffalo, but into the elephant's shoulder. The wound was so severe, that it had not healed a year later.

Yet the elephant stood firm, although it was gored by the buffalo, which was then killed by another gun.

In case of wounds or injuries the elephant has an immense advantage over all other animals, in the use of its trunk for dressing wounds. It is at once a syringe, a powdering-puff and a hand. Water, mud, and dust are the main "applications" used, though it sometimes covers a sun-scorched back with grass or leaves. Wounded elephants have marvelous power of recovery when in their wild state, although they have no gifts of surgical knowledge, their simple system being confined to plastering their wounds with mud, or blowing dust upon the surface. Dust and mud comprise the entire stock of medicines of the elephant, and this is applied upon the most trivial, as well as upon the most serious occasions. I have seen them when in a tank plaster up a bullet wound with mud taken from the bottom.

The African elephant is more of a tree-feeder than the Indian, and the destruction committed by a large herd of such animals when feeding in a mimosa-forest is extraordinary; they deliberately march forward, and uproot or break down every tree that excites their appetite. The mimosas are generally from sixteen to twenty feet high, and, having no tap-root, they are easily overturned by the tusks of the elephants, which are driven like crowbars beneath the roots, and used as levers, in which rough labor they are frequently broken. Upon the overthrow of a tree, the elephants eat the roots and leaves, and strip the bark from the branches by grasping them with their rough trunks. Two elephants may sometimes unite their strength in order to overthrow a tree of more than ordinary size. In South-Eastern Africa I have seen large areas of sandy soil ploughed up by the tusks of these animals in their search for roots.

In digging the elephant always uses one particular tusk, which, in consequence, is much more worn than the other. It is nearly always the right tusk which is selected for this duty; and the one so used is termed by the Sudanis the *hadam*, or servant.

In Southern Africa, at least, elephants drink almost every night, but only rarely during the day. In that part of the continent they seek the deepest shades of the forest during the heat of the day, and generally appear to sleep in a standing posture.



STORY OF THE LEOPARD.

Some years ago a couple of leopards, which lived in England, afforded a strong proof of the innate individuality of these animals. One of them, a male, was always sulky and unamiable, and never would respond to offered kindnesses. The female, on the contrary, was most docile and affectionate, eagerly seeking for the kind words and caresses of her keeper. She was extremely playful, as is the wont of most leopards, and was in the habit of indulging in an amusement which is generally supposed to be the specialty of the monkey tribe. Nothing pleased her so well as to lay her claws on some article of dress belonging to her visitors, to drag it through the bars of her cage, and to tear it in pieces. Scarcely a day passed that this amusingly mischievous animal did not entirely destroy a hat, bonnet or parasol, or perhaps protrude a rapid paw and claw off a large piece of a lady's dress.

The cubs of the leopard are pretty, graceful little creatures, with short pointed tails, and spots of a fainter tint than those of the adult animal. Their number is from one to five. Even in captivity the leopard is a most playful animal, especially if in the society of companions of its own race.

The beautiful spotted creatures sport with each other just like so many kittens, making, with their wild, graceful springs, sudden attacks upon one companion, or escaping from the assaults of another, rolling over on their

backs, and striking playfully at each other, and every now and then uniting in a general skirmishing chase over their limited domains. Even when they are caged together with lions and tigers, their playfulness does not desert them, and they treat their enormous companions with amusing coolness.

The third in point of size of the Old World cats is the leopard, or panther, a species closely allied to the lion and tiger, from whom it is at once distinguished by its color marks and inferior dimensions. Two species of large spotted cats are recognized as inhabiting Africa and India, to



LEOPARDS IN THE JUNGLE.

the smaller of which the name leopard is restricted, while the larger is known as the panther. Although there is an enormous amount of difference between the smallest and the largest of such spotted cats in point of size, yet I find that the change from the one to the other is so gradual and complete that, in a large series of specimens, it is quite impossible to say where leopards end and panthers begin. Hence it appears to me that there is but a single species, for which the name leopard should be adopted. The spotted coat of the leopard being its most distinctive feature, the

animal (in common with the hunting-leopard) is known to the natives of India as the chita, meaning spotted; the leopard, on account of its larger size, being often distinguished as the chita-bagh, or spotted tiger. I have made a careful study of the two animals, and have concluded that they are of the same species. They are as close kin as are the Jersey and Shorthorn or Durham cows.

The differences in the size of individual leopards is so great that while



A PERSIAN LEOPARD AND ITS HABITS.


in the smallest examples the total length of the head, body and tail does not exceed five feet, in the largest it reaches to as much as eight feet. In a large male, of which the total length was seven feet eleven inches, the head and body measured four feet nine inches, and the tail three feet two inches.

The leopard is one of the three larger cats which are common to India and Africa, the other two being the lion and the hunting-leopard. The distribution of the leopard is, however, more extensive than that of the lion, embracing nearly the whole of Asia, from Persia to Japan, but not extending as far north as Siberia.

Next to the tiger in India, and to the lion in Africa, the leopard is the most formidable flesh-eating animal to be found in either country. In its habits it differs essentially from both the lion and the tiger in that it is thoroughly at home in trees, running up a straight-stemmed and smooth-barked trunk with the speed and agility of a monkey. Moreover, the leopard is a much more active animal than the tiger, frequently taking tremendous leaps and springs. The Indian leopard, although its powers of offense are far inferior to those of the tiger, is in some respects a more dangerous animal, as it is roused with less provocation, and is more courageous in attacking those who disturb its repose. The favorite resorts of the Indian leopard are rocky hills covered with scrub, among which it seeks secure hiding in caves and under overhanging masses of rock. From strongholds such as these the leopard in Southern and Central India watch the surrounding country towards sunset, and descend with astonishing celerity and stealth, under cover of the rocks, to cut off any straggling animal among the herds or flocks on their return to the village at nightfall. From their habit of lurking in the vicinity of the habitations of man, to prey upon cattle, ponies, donkeys, sheep, goats, and dogs, leopards are frequently brought into collision with Indian villagers; and a leopard being mobbed in a garden, or field of sugar-cane or standing corn, from which he will charge several times, and bite and claw half a dozen before he is despatched or makes his escape, is no uncommon occurrence in India,

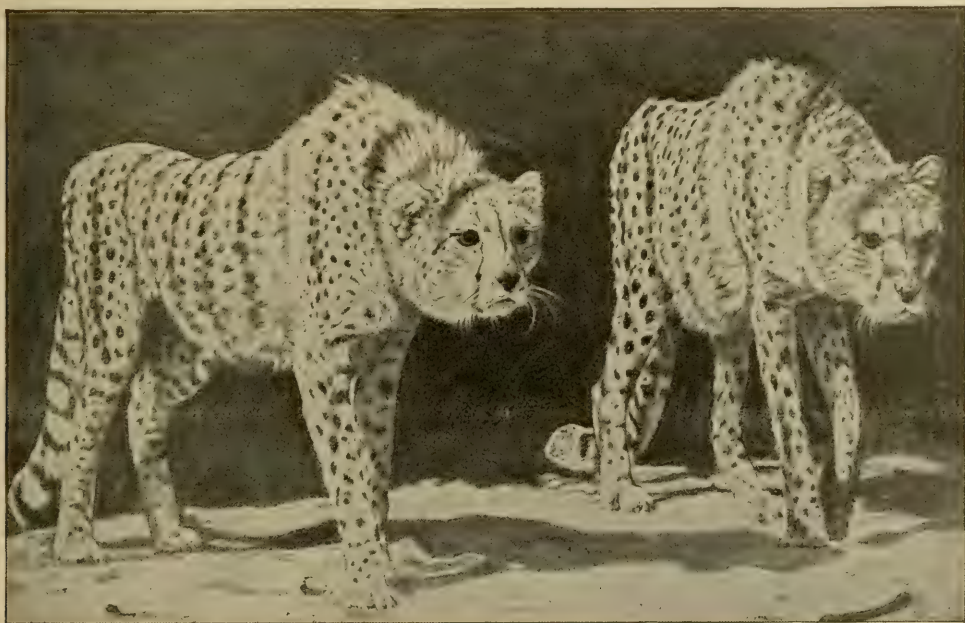
This partiality of the leopard for dogs seems to be characteristic of the animal from one end of India to the other, and there are many instances on record where leopards in the hill-stations have swooped down in broad daylight and carried off pet dogs from before the very eyes of their European masters or mistresses. It is but rarely that leopards take to man-eating, but instances do occur, one of which came under my notice some years ago, when a leopard carried off a considerable number of persons from a village in Kashmir. In Africa the general habits of the leopard appear to be very much the same as in India, Sir Samuel Baker relating how, on one occasion, a dog was carried off from the very middle of his camp by one of these marauders.

The leopard has often been tamed, and, indeed, almost domesticated, being permitted to range the house at will, greatly to the consternation of strange visitors. This complete state of docility can, however, only take place in an animal which has either been born in captivity, or taken at so early an age that its savage propensities have never had time to expand.



Even in this case the disposition of the creature must be naturally good, or it remains proof against kindness and attention, never losing a surliness of temper that makes its liberation too perilous an experiment. The very same treatment by the same people will have a marvelously different effect on two different animals, though they be of the same species, or even the offspring of the same parents.

The snow-leopard inhabits the elevated regions of Central Asia. In Ladak it does not descend below the level of some nine thousand feet above



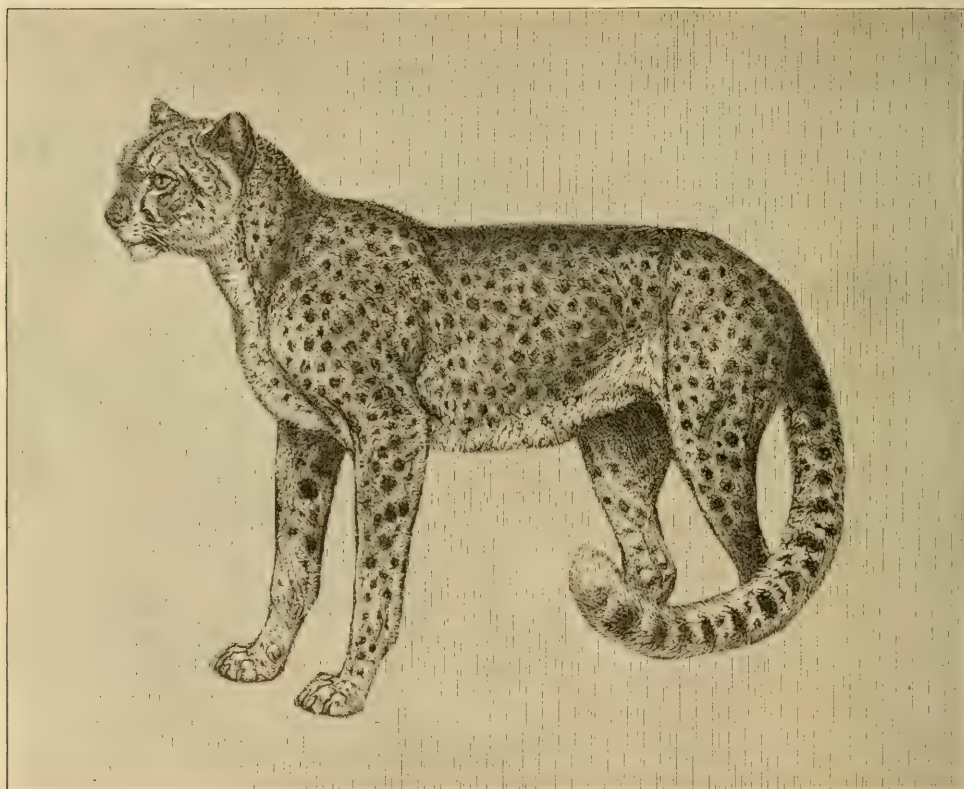
A PAIR OF CHITAS OR HUNTING LEOPARDS.

the sea-level in winter, while in summer it ranges to a height of eighteen thousand feet and upwards. Its long and thick fur is specially adapted to protect the animal against the severe winter cold of the regions it inhabits. The beauty of the fur of a snow-leopard killed during the winter is unrivaled. The animal is probably found all over Thibet, but how far to the westward of Gilgit it extends is at present unknown. It has, indeed, been reported from Persia and Armenia.

Our knowledge of the habits of the snow-leopard is at present but limited, since comparatively few have seen the animal in its wild state. From

living in a practically treeless country, it is probable that it is unable to climb. It preys chiefly upon wild sheep, and goats, and marmots, and other rodents; it wages war upon domestic sheep and goats when grazing upon the higher grounds; and it will likewise, it is said, occasionally attack ponies. It is reported never to molest man.

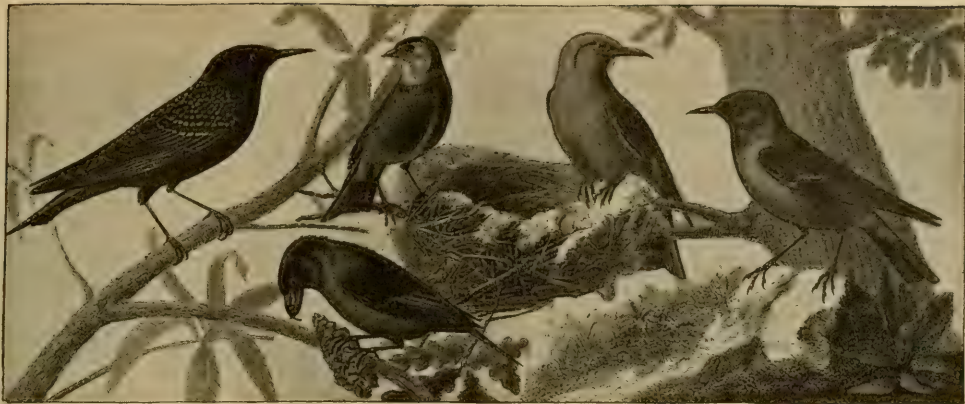
The hunting-leopard is another representative of the cat family, and differs so markedly in certain respects from all the others that it is now gen-



A YOUNG HUNTING LEOPARD.

erally admitted to rank as a distinct breed. It is generally known to Europeans as the chita.

The hunting-leopard is distinguished by the slenderness of its body, and the great relative strength of its limbs, which are longer than in any of the true cats, not even excepting the lynxes. In length of body it may be compared with the true leopard, although it stands much higher on the legs.



STORY OF THE REINDEER.

The most enjoyable sleigh ride I ever took was behind a pair of reindeer. After that trip of nearly four hundred miles I could readily understand why Santa Claus selected the reindeer to carry him on his annual gift-making tour. The reindeer is a rapid, sure-footed traveler, and is guided as easily as one would guide a well-trained horse.

My companion on this trip was a Laplander, or a Lap, as we commonly call the inhabitants of Lapland. He was a well-to-do little fellow who lived in comfort, for he had a large herd of reindeer. The wealth of a Lap does not depend on the amount of money or land in his possession, but upon the number of deer he owns. If he owns from four to six hundred head he is rich; from two hundred to three hundred he is in comfortable circumstances; if he possesses only one hundred he leads a hand-to-mouth existence; if he has but fifty head, he is obliged to join his animals with the herd of a richer man in order to make a living. The reindeer serves the Lap as a beast of burden and supplies him with food and clothing.

From the nature of the country it inhabits, the reindeer is compelled to lead a migratory life, in which the natives, who have to depend entirely for their subsistence on the animal, have to participate. Troops of them during the winter months reside in the woods, feeding on the lichens that hang from the boughs of the trees, as well as on those that grow upon the

ground beneath. In the spring they repair to the mountains in order to escape the swarms of stinging gnats and gad-flies which infest the air, and inflict wounds in the skin of great severity. In the fall they return to the forests.

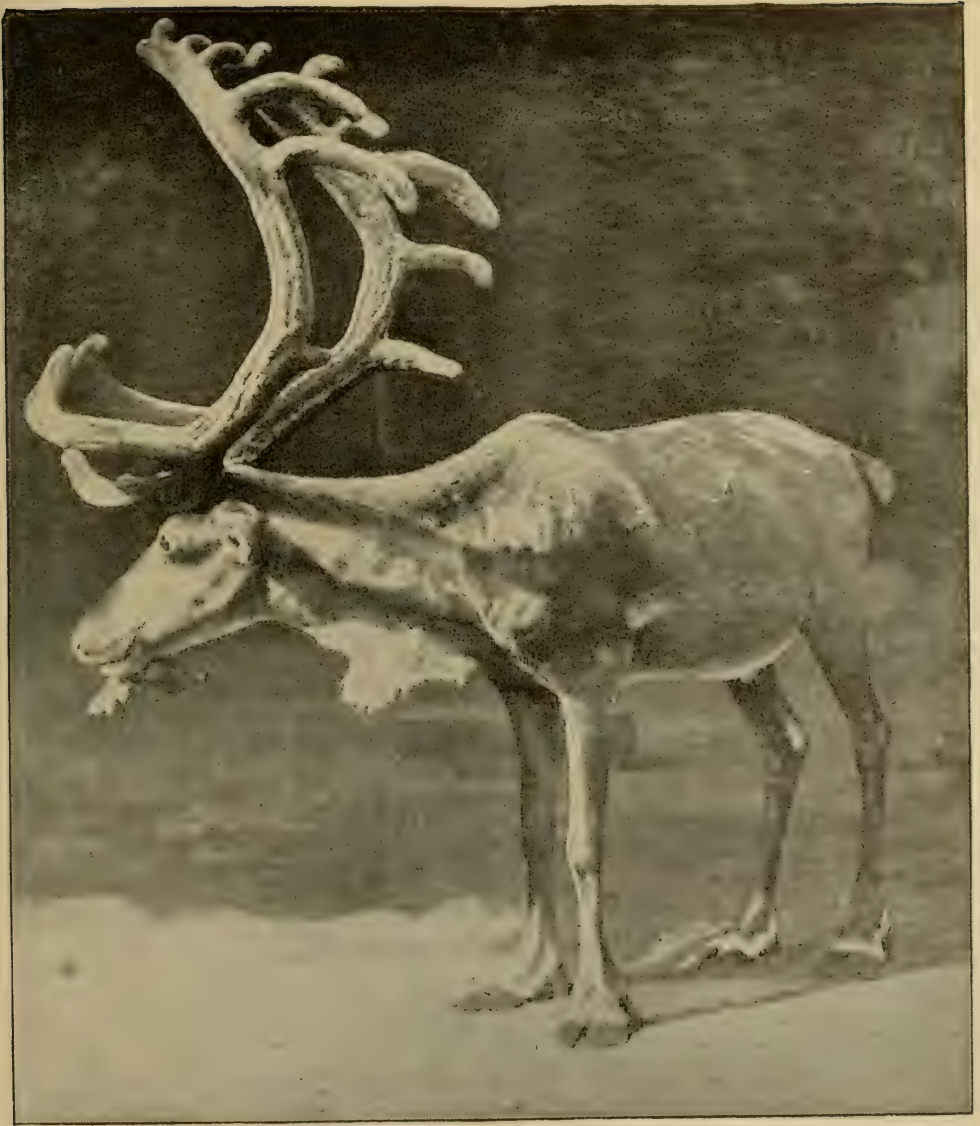
I have witnessed several of these migrations of the undomesticated reindeer. On one occasion, in Eastern Siberia, two large migrating bodies of reindeer passed at no great distance. They were descending the hills from the northwest, and crossing the plain on their way to the forests, where they spend the winter. Both bodies of deer extended farther than the eye



A REINDEER OF LAPLAND IN MID-WINTER.

could reach, and formed a compact mass narrowing to the front. They moved slowly and majestically along, their broad antlers resembling a moving wood of leafless trees. Each body was led by a deer of unusual size, which my guides assured me was always a female.

The reindeer is distinguished from all other members of the deer family by the fact that both sexes have antlers which grow out of the top of the head instead of the forehead. The muzzle of the reindeer differs from that of all the deer hitherto mentioned in being clothed with soft hairs of mod-



REINDEER PHOTOGRAPHED IN THE FOREST.

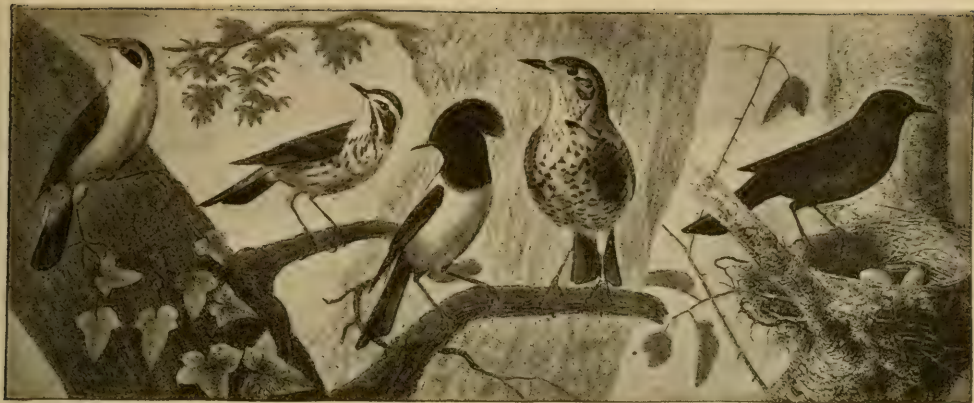
erate length. The neck has no distinct mane, but the throat is fringed with long and rather stiff hair. The ears are smaller than in any other deer, and thickly covered on both sides with hair. The hair clothing the body

is from an inch to an inch and a half in length, and is somewhat crimped or waved, while beneath this is a coat of woolly under-fur. The general color of the reindeer is brownish-gray, with the face, neck and throat whitish, and the nose, ears and limbs brown. There are, however, great individual variations as regards color, some specimens being nearly or quite white throughout. In general the tail is white, with a tinge of brown at the root and on the upper surface; and there is a distinct white ring around each fetlock.

The various races of reindeer differ considerably from one another in respect of height; but the bucks of the larger American variety stand about $4\frac{1}{2}$ feet at the withers, and usually weigh some 350 pounds, although unusually fine specimens may reach nearly 400 pounds. In regard to the length of the antlers, it appears that fine examples vary from 48 to over 57 inches, although one pair is known in which the length reaches to upwards of 60 inches. There is great variation in regard to the span of antlers and the number of points they carry, while it is not unfrequently the case that the longest specimens have by no means the greatest girth.

At the present day reindeer are unknown in the Old World below the southern shore of the Baltic; it appears, however, that in the time of Cæsar they were met with in the Black Forest of Northern Germany, although whether as permanent residents or as winter immigrants, cannot, of course, be now ascertained. In the British Isles, remains of reindeer are commonly met with in England, Scotland, and Ireland, and it was long considered that in Caithness this deer survived till the middle of the twelfth century, although the latest researches tend to disprove this idea. Reindeer remains are also found over the Continent, as far south as the valleys of the Dordogne and Garonne in France.

Reindeer inhabit the northern regions of both the Eastern and Western Hemispheres, and there is but a single species.



THE STORY OF THE COYOTE.

The coyote has been well-named by a western writer, "the lean, gray vagrant of the plains." This animal is considerably smaller than the common wolf, from which it is also distinguished by its thicker and longer fur and more bushy tail.

The coyote ranges from the south of Costa Rica, in Central America, to the lower portions of Hudson's Bay. It is still abundant in Texas, Northern Mexico, and the western prairies of the United States, but is rare in Guatemala; and it has been suggested that it is but a comparatively recent immigrant into Central America.

The coyote is more generally in the habit of burrowing in the ground than the common wolf; it is also far less savage and destructive, and becomes more docile and gentle in captivity. Like the common wolf, it will on occasions hunt in packs; and it is at least as noisy an animal, although the tone of its howl is quite different. As regards food, it appears to be almost omnivorous; and, when an animal diet is unattainable, it will feed upon juniper-berries, or the prickly pear. Rabbits, rats, young birds, etc., form, however, its staple diet; and it does not appear that it ever attacks the larger mammals, although, when wounded and brought to bay, it will defend itself fiercely. In speed it is far inferior to the wolf, and it can be readily overtaken by a good horse. The cubs are born in May and June; the number in a litter usually being five or six, but occasionally ten.

On account of the length of its fur, the coyote appears to be a thicker built and shorter-legged animal than it really is. The color varies considerably at different seasons of the year, being a bright brown in summer, and gray or grayish in winter; this ground-color at both seasons being overlaid with a shading of black, which tends to form stripes along the back and across the shoulders and loins. The under-parts are of a dirty white tint; while the upper portion of the muzzle, and the outsides of the ears and legs are generally tan color.

To the hunter or emigrant encamped upon the prairie, the coyote is a positive nuisance. By instinct it is a thief and a coward. It will hang around a camp and watch every opportunity to steal a meal. Sometimes the gnaw-



A COYOTE OF THE WESTERN AMERICAN PRAIRIES.

ings of hunger will give it enough courage to sneak into a tent and seize any morsel of food that may be left exposed. Having devoured this it will take a position a few hundred yards away, squatting on its haunches and licking its chops, waiting for another chance, but always prepared to run if a camper picks up a stone or stick to throw at it.

It is at night, however, that the coyote makes itself a nuisance. Its voice is far from musical, but loud and high. It keeps up an almost incessant yelping, driving sleep from the eyes of the tired camper. Two or three coyotes yelping in chorus will make enough noise to convince a person who hears them for the first time that there are fifty or sixty in the pack.

When a hunter's patience has been exhausted by their night yelping, he will sometimes take his gun and steal out for a shot at them. If he succeeds in shooting one of them, the others will pounce upon the wounded animal, drag him down and devour him.

One good dog is a match for several coyotes, and if the animal has been trained to fight them, it can put a pack of them to flight.



A MEXICAN COYOTE.

But so many dogs of the western prairie are inbred with wolves and coyotes, that they will often associate together on the most friendly terms. The association is usually bad for the dog, as there have been numerous cases where dogs have deserted their masters to take up a roving and precarious existence with coyotes.

The shepherds of the prairies and mesas in the southwestern sections of the United States are greatly harassed by coyotes, especially in the lambing season. The coyote is fond of lamb, and the younger and tenderer it is the better he likes it. The old rams and the goats that accompany every herd of sheep are more than a match for the coyote, but the lambs and sometimes the young ewes fall easy victims to his claws and fangs.

In the days when the Western prairies were black with herds of buffaloes, the coyotes were always found in great numbers on the outskirts of the herd, waiting for a chance to attack some old and decrepit animal driven out by the young bulls. They would follow a weak, old buffalo for days, and when his strength failed him, so that he was no longer able to defend himself, they would rush upon him in large numbers, some at his throat, others at his heels, and pull him down, literally eating him alive.

The coyote is not as shrewd as the wolf in detecting and avoiding poison bait, and Western ranchmen have rid the country of thousands of them by poisoning the carcasses of dead animals.

The Mexican coyote has longer legs, a more slender form, and a more fox-like head than its northern cousin, but in habits and instinct they are the same.

I have witnessed many an exciting chase by coyotes after a Jack-rabbit. One that I remember was when I was in the hot, dry section of Southern Colorado, where the blazing sun had shriveled the vegetation in the daytime and where no dew falls to revive it at night. I had been in camp several hours and was lying in front of my tent watching the big full moon, which in that rarified atmosphere looks twice as big and twice as high as it does in the Eastern States. When I heard the shrill yelp of a coyote, followed by another and then several others. I arose and got my rifle, and just as I came out of my tent a Jack-rabbit ran past within fifty yards of me, pursued by seven coyotes. The rabbit could have outrun them on a straight line, but they practically had it surrounded when I saw them, and in two hundred yards more they closed in on bunny. Inside of two minutes they had torn him to pieces and were fighting among themselves. I avenged the rabbit by shooting two of them before they scampered off.



STORY OF THE WILD SHEEP.

Vice-President Roosevelt simply stated a fact known to all Western hunters when he described the difficulties attending a successful pursuit of the Rocky Mountain sheep, or "big horn," as they are generally known. During Mr. Roosevelt's various outing excursions he took a keen delight in hunting this wary animal, but frequently he was compelled to acknowledge defeat. In the spring and summer the full-grown rams form separate bands of from three to twenty, and are usually found feeding along the edges of glacier-meadows, or resting among castle-like crags of the high summits; and whether quietly feeding, or scaling the wild cliffs for pleasure, their noble forms, and the power and beauty of their movements, never fail to strike the beholder with lively admiration. Their resting-place seems to be chosen with reference to sunshine and a wide outlook, and most of all to safety from the attacks of wolves. Flocks of these sheep have, on more than one occasion, been known to leap down a precipice one hundred and fifty feet in height.

They frequent the elevated and craggy ridges with which the country between the great mountain range and the Pacific is intersected; but they do not appear to have advanced farther to the eastward than the declivity of the Rocky Mountains.

Their favorite feeding-places are grassy knolls, skirted by craggy rocks,

to which they can retreat when followed by dogs or wolves. They are accustomed to pay daily visits to certain caves in the slaty rocks that are encrusted with a salty growth, of which they are fond. The flesh of this sheep is quite delicious when it is in season.

Although the "big horn" was numerous throughout an immense region a few decades ago, the advance of the white man has served to diminish their numbers, and, like the buffalo, the animal will soon be extinct unless the Government gives it protection. These sheep have been seen on the summits of the highest peaks in the United States, and their agility in crossing crags and glaciers is marvelous.

I shot a ram in Wyoming several years ago which stood four feet in height at the withers, weighed over four hundred pounds, and whose horns, measured along the curve, were forty-two inches in length. The ewes stand about three feet in height.

The magnificent wild sheep of Mongolia is known as the argali, and is as large as a full grown donkey. A closely allied species is found in Thibet. Both of these have many points of similarity with the "big horn."

The Pamir sheep takes its name from inhabiting the elevated district in Central Asia known as the Pamirs, or "Roof of the World." It is also found on the table-lands to the westward and northward of Eastern Turkestan.

The Pamir sheep, although furnished with longer horns, does not appear to attain quite such large dimensions as the Thibetan argali, from which it is mainly distinguished by the form of the horns, and also by color. In the male the horns, when viewed from the side, are seen to form a spiral of about a circle and a quarter; and when adult they are much longer than those of the argali, but are less massive at the base. In fine specimens I measured, the horns attained a length of from sixty to seventy inches along the curve, with a girth at the base of about fifteen inches. One specimen had the remarkable length of eighty-two inches, with a girth of eighteen inches.

The European member of this family is known as the mouflon, and formerly was found in all parts of continental Europe. In recent years the animal has become extinct except in Sardinia and Corsica. The mouflon is much smaller than the other species, rarely measuring more than thirty inches at the withers.

In Sardinia the mouflon, instead of being found on all the mountain ranges, are restricted to certain chains, and there they frequent only the highest ridges, generally confining themselves to such peaks as command

a view of the whole of the surrounding country. The flocks of mouflon are led by an old and powerful ram; but at the pairing-season the large flocks used to split up into small parties, consisting of one ram and several ewes. The rams engage in fierce conflicts among themselves for the supremacy; and during the months of December and January the mountains re-echo with the sound of the blows as one ram rushes against the head of another. The Sardinian mouflon is one of the most difficult animals to approach with



A MOUFLON FAMILY.

which I am acquainted. When they are alarmed, or at "gaze," they have a habit, or at least the rams have, of placing themselves in the middle of a bush, or in the shadow which it casts. The ewes, which are naturally less conspicuous, do this in a less degree. The mouflon are assisted by the wonderful alertness of their eyes. One of their favorite devices is to seek for spots on the lee-side of a ridge where the currents of air meet. Here,

and in otherwise favorable positions, they are quite unapproachable. Occasionally wild mouflon will desert their own kin to live among tame sheep: while sometimes also a motherless domestic lamb has been known to seek companionship among a flock of mouflon.

In conformity with its structure, the bharal of Thibet is intermediate in its habits between the sheep and the goats. Like the former, it is found



A MOUFLON OF SARDINIA.

on undulating ground, and frequently lies down during the day on its feeding-ground, though generally amongst stones; but, like the latter, it is a splendid climber, perfectly at home on precipitous cliffs, and when alarmed takes refuge in ground inaccessible to man. It is found in herds of from eight or ten to fifty or even a hundred; the males and females being generally

found apart in the summer, but frequently associating together at all seasons. The herds keep to high, open ground above forest, and never even enter bush. They feed and rest alternately during the day. Owing to their color it is peculiarly difficult to make them out when they are lying down amongst stones. It appears that these animals are never found below an elevation of ten thousand feet above the sea-level, while in summer they range up to fourteen thousand and sixteen thousand feet. Bharal are by no means difficult of approach in districts where they have not been much disturbed,



“BIG HORNS” OF THE ROCKY MOUNTAINS.

and on one occasion in Ladak I came suddenly upon a flock of five rams lying asleep in an unfrequented path.

The Barbary, or maned sheep, which is the only wild representative of the group met with in Africa, while agreeing with the bharal in the general character of its horns and skull, is distinguished by the great mass of long hair clothing the throat, chest, and fore-limbs, and likewise by the great length of the thickly-haired tail, which reaches slightly below the hocks,

The Barbary sheep attains a height of rather over three feet, and is of a nearly uniform pale yellow color.

The Arabs are in the habit of pitching their tents near the scanty springs frequented by these sheep, and daily lead their goats high up the mountains. Consequently, the animals have no means of escaping from them, as every



BARBARY, OR MANED SHEEP.

mountain within reach of water is similarly infested. They are constantly within sight and hearing of the Arabs and their goats, and as they cannot get away they have developed the art of hiding themselves to an extraordinary extent, and they have unlimited confidence in their own invisibility.



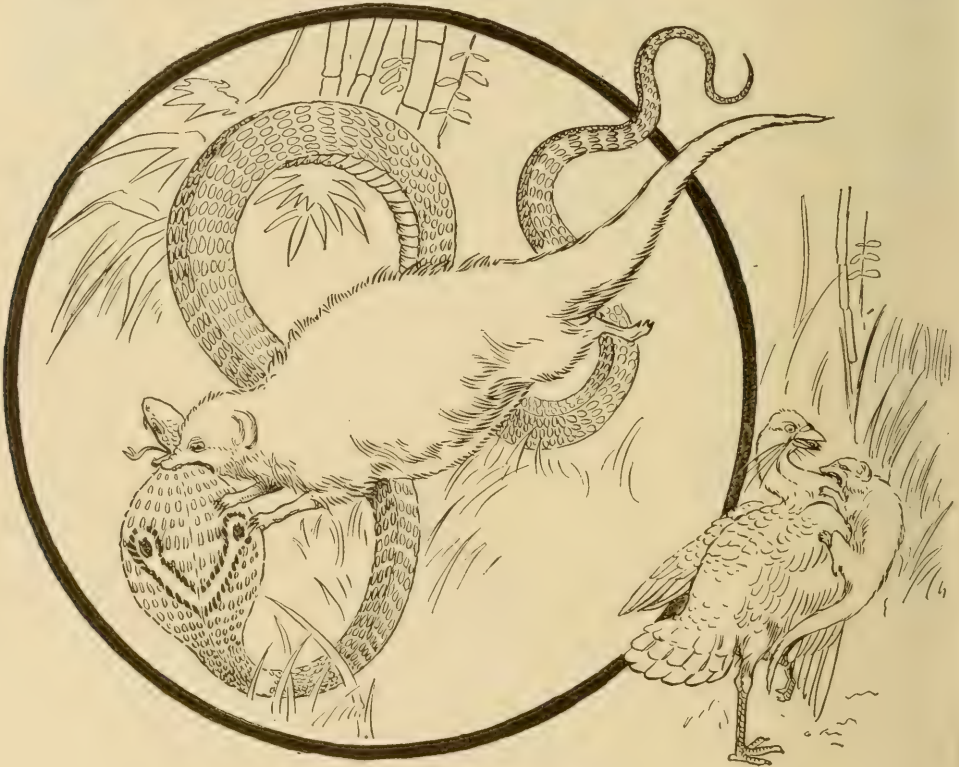
STORY OF THE MUNGOOSE.

To my mind the best all-around rough-and-ready fighter, of his size, in the animal kingdom is the mongoose. In India this little creature delights in nothing so much as to meet a cobra, the most deadly of all snakes.

The mongoose is about the size of a cat. It lies in wait for its hereditary enemy, or rather victim, for the fight always has one ending, and when the serpent comes into range attacks with a desperation born of the knowledge of the cobra's venomous bite. His mode of attack is to tease the snake into darting at him, when with inconceivable rapidity he pounces on the reptile's head.

Much has been written as to the combats of both the Egyptian and the Indian mongoose with venomous snakes, and also as to the alleged immunity of these animals from snake poison. The prevalent belief throughout oriental countries is that the mongoose, when bitten, seeks for an antidote, a herb or root known in India as manguswail. It is scarcely necessary to say that the story is destitute of foundation. There is, however, another view, supported by some evidence, that the mongoose is less susceptible to snake poison than other animals. I have not seen many combats, but, so far as I can judge from the few I have witnessed, the mongoose escaped

being bitten by his wonderful activity. He appears to wait till the snake makes a dart at him, and then suddenly pounces upon the reptile's head and crunches it to pieces. I have seen a mongoose eat up the head and poison glands of a large cobra, so the poison must be harmless to the mucous membrane of the former animal. When excited, the mongoose erects its long stiff hair, and it must be very difficult for a snake to drive its fangs through this and through the thick skin which all kinds of mun-

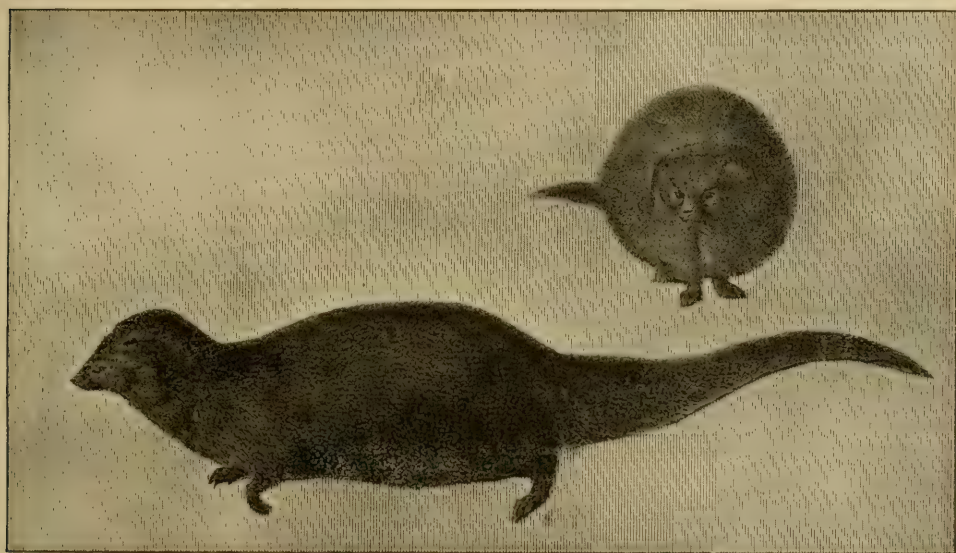


HOW THE MUNGOOSE FIGHTS.
(Killing a Cobra and attacking a Great Bustard.)

gooses possess. In all probability a mongoose is very rarely scratched by the fangs, and, if he is, very little poison can be injected. It has been repeatedly proved by experiments that a mongoose can be killed, like any other animal, if properly bitten by a venomous snake, though even in this case the effects appear to be produced after a longer period than with other mammals of the same size.

In addition to being a benefactor to the human race as a destroyer of

poisonous snakes, the Indian mongoose (like its Egyptian cousin) is equally valuable as an exterminator of rats, ships having more than once been cleared of those pests in a comparatively short period by the introduction of a mongoose. About twenty years ago the sugar-planting industry in Jamaica was threatened with annihilation from the damage inflicted on the canes by a particular species of rat, which absolutely swarmed in the island. After ferrets, toads and ants had been tried with more or less ill-success to stay the plague, the Indian mongoose was introduced. In the spring of 1872 nine of these animals were imported and let loose in the island.



INDIAN MUNGOOSES.

Within a few months young ones were seen about, and in less than six months there was evidence, clear and certain, that the rats were much less destructive than they had ever been known. Fewer rats were caught and fewer canes were destroyed, month after month. Within two years the expenditure in killing rats ceased almost entirely, and in another year the planters enjoyed relief and immunity; and ever since the losses from rats have been a mere trifle. Within a very short time neighboring islands found a similar benefit. The mongoose has been subsequently introduced, with equally satisfactory results, into Cuba, and America's new possession, Porto Rico.

The mongoose is easily tamed and in India is kept for the purpose of driving the cobra from the residences of the wealthy inhabitants. Snake-charmers carry the animal about with them. I at one time owned one which always accompanied me in my hunting trips. Whenever I shot birds the little fellow would stand on his hind legs when he saw me present the gun, and run for the bird when it fell. He had, however, no notion of retrieving, but would scamper off with his prey to devour it at leisure. He was a most fearless little fellow, and once attacked a big greyhound, who beat a retreat. In a rage his body would swell to nearly twice its size, from the erection of the hair; yet I had him under such perfect subjection that I had only to hold up my finger to him when he was about to attack anything, and he would desist. I heard a great noise one day outside my room, and found "Pips" attacking a fine male specimen I had of the great bustard, which he had just seized by the throat. I rescued the bird, but it died of its injuries. Through the carelessness of my servants he was lost one day in a heavy brushwood jungle some miles from my camp, and I quite gave up all hope of recovering my pet. Next day, however, in tracking some antelope, we happened to cross the route taken by my servants, when we heard a familiar little yelp, and down from a tree we were under rushed "Pips."

The true mongooses have long, weasel-like bodies, and a more or less elongated tail, which is generally thick at the root, and may be covered with long hair, its general color being like that of the body, but the tip often darker. The longer hairs of almost all the mongooses are marked with alternate darker and lighter rings, which communicate a peculiar and characteristic speckled appearance to the fur. The head has a pointed muzzle, with a rather short nose, in which there is a groove on the completely naked under surface. The ears are small and rounded. The limbs are likewise of extreme shortness, the feet being provided with five toes, of which the first, both in front and behind, is extremely small. These toes are generally detached, but may be slightly connected by a small web at their bases. The under surfaces of the fore feet are generally naked, while in most cases only the front part of the soles of the hind feet are free from hair.

The meerkat, as the South African mongoose is known, is a small animal of slender form, with a tail of about half the length of the head and body. The fur is long and soft, of a light grizzled gray color, with black transverse stripes across the hinder part of the back, and the tail yellowish, with a black tip. The longer hairs are broadly ringed with black and white, the white

predominating. The transverse light and dark bands on the loins are formed by the regular arrangement of the hairs, by which the white and black rings come opposite to each other on adjacent hairs. Meerkats may be distinguished at a glance from all other mongooses by their elongated nose and claws, as well as by their peculiar coloration, no other species having ears differing in color from the rest of the head.

South African meerkats appear to be confined to Cape Colony, extending at least as far north as Algoa Bay. These animals form most admirable



SOUTH AFRICAN MUNGOUSES OR MEERKATS.

and amusing little pets, nearly every homestead having one or more of these creatures. In their wild state the meerkats live in colonies or warrens, burrowing deep holes in the sandy soil, and feeding chiefly on succulent bulbs which they scratch up with the long, curved black claws on their fore feet. They are devoted sun-worshippers, and in the early morning, before it is daylight, they emerge from their burrows, and wait in rows till their divinity appears, when they bask joyfully in his beams. They are very numerous on the arru, and, as you ride or drive along through the veldt, you often come upon little colonies of them sitting up sunning themselves,

and looking, in their quaint and pretty favorite attitude, like tiny dogs begging. As you approach they look at you fearlessly and impudently, allowing you to come quite close; then, when their confiding manner has tempted you to get down in the wild hope of catching one of them, suddenly all pop so swiftly into their little holes that they seem to have disappeared by magic.

Although in the Cape it appears that the name meerkat is also often applied to the thick-tailed mongoose, it is the true meerkat alone which makes such a charming pet. The quaint, old-fashioned little fellow is as neatly made as a small bird; his coat, of the softest fur, with markings not unlike those of a tabby cat, is always well kept and spotlessly clean; his tiny feet, ears and nose are all most daintily and delicately finished off, and the broad circle of black bordering his large dark eye serves to enhance the size and brilliancy of the orbs.

The most typical representative of the mongoose family is the Egyptian mongoose or ichneumon, inhabiting Africa, north of the Sahara Desert, Palestine, Asia Minor, and the southern portions of Spain. It was one of the sacred animals of the ancient Egyptians, and is often depicted on their frescoes. It feeds largely upon the eggs of crocodiles, although this habit has not been recorded of any of the Indian species. It was, and I believe still is, domesticated in Egypt; and has the same antipathy to snakes alluded to under the head of the common Indian species. The Egyptian mongoose is a large species; the length of the head and body being about twenty inches.



THE STORY OF THE ZEBRA.

My first introduction to the zebra in his wild state was in the hilly country of Eastern Africa. The native hunters of my party wanted some zebra meat, of which they are extremely fond on account of the large amount of yellow fat it contains.

Saddling our best horses, we made an early start. It was ten o'clock, however, before we came in sight of our quarry. The herd comprised about fifty head and was grazing among a mixed herd of antelope and wild goats. A large antelope had been posted as a sentinel and gave warning of our approach. The shrill whistle of the antelope blended with the peculiar neigh of the zebras, which is a mixture of donkey notes and the subdued whining of a dog.

They started for the higher ground and we followed. At first they ran in single file, the stallions ahead, but as we urged our horses faster and drew closer they ran more in a bunch. At last one of the natives got a shot at a fine young filly and put a bullet in her body near the shoulder. She dropped to her knees, but was up again in a flash, and at once obeyed a rule in force among these animals by separating from the herd and running off at right angles. The natives pursued her, overtook her and shot her down.

That night they had a great feast. I tasted the zebra flesh, but found it unpalatable. I had shot two fine antelopes, and although I offered my men one of the carcasses, they declined it and ate the zebra instead.

The alternating yellowish-white and brown-black stripes of the zebra, which markings of the skin and hair are more pronounced than in any other of the wild animals, not excepting the tiger, give the name to the animal. Zebraed means banded, and the name is appropriate to the horse-tiger, as the zebra is sometimes called. The haunts of the animal in its natural state are among the mountainous and almost inaccessible regions of



A FAMILY OF ZEBRAS.

Southern and Eastern Africa. Shy by nature, and endowed with wonderful powers of sight, few zebras have been captured alive. The animal is rarely found alone, preferring to travel in large troops.

The three known species of zebra, together with the quagga, form a group agreeing in essential character with the asses, but distinguished by their more or less completely striped heads and bodies. In both these groups the mane is erect, and the upper part of the tail is free from long hairs; while there are naked callosities on the fore limbs only, and the ears

are longer, the head relatively larger, and the hoofs narrower than in the horse.

The true or mountain zebra is the typical representative of the striped group, and is essentially an inhabitant of hilly districts. It is the smallest of the three species, standing from 4 feet to 4 feet 2 inches (12 to 12½ hands) at the withers, and has relatively long ears and a comparatively short mane, with the tail but scantily haired. The general ground-color of the hair



EAST AFRICAN ZEBRA.
(Showing how it is hunted.)

is white, while the stripes are black, and the lower part of the face is light brown. With the exception of the under parts of the body and the inner sides of the thighs, the whole of the head, body and limbs, as well as the upper part of the tail, are striped.

All who have seen zebras in their native haunts speak of the beautiful appearance presented by a drove as they stand for a moment to gaze at the hunter, and then wheel round to seek safety in flight; and as they afford

but unsatisfactory trophies, it seems a pity that so many are killed for the mere sake of sport. When standing on sandy ground in full moonlight, a zebra harmonizes so exactly with the color of its surroundings as to be quite invisible at a short distance.

It is very wild and suspicious, carefully placing sentinels, to look out for danger. Notwithstanding these precautions, several zebras have been taken alive, and some, in spite of their vicious habits, have been trained to draw a carriage. In all probability it might be domesticated like the ass, as the black cross on the back and shoulders of the latter animal prove the affinity between them. In the Transvaal there are many teams made up partly of zebras and partly of mules.

The quagga, so far as color is concerned, forms a connecting link between the zebras and the asses; but in its short ears, and the extent to which the tail is haired, approximates to the horse. In height it stands about the same as the true zebra; in color the upper parts are of a light reddish-brown, with the head, neck and front half of the body marked with irregular chocolate-brown stripes, gradually becoming fainter, until they are quite lost on the hind-quarters. There is a dark stripe running down the back on to the upper part of the tail; but the rest of the tail, together with the under-parts, the inner sides of the thighs, and the legs, are white.

Its actual habitat may be precisely defined as within Cape Colony, the Orange Free State, and Griqualand West. I do not find that it ever extended to Namaqualand and the Kalaharr Desert to the west, or beyond the Kei River, the ancient eastern limit of the Cape Colony to the east.



THE STORY OF THE YAK.

On the plateau of Thibet I hunted the long-haired yak some years ago. We reached the most inaccessible region of that wild country, rarely visited by white men, in the spring and spent a part of the summer there. During that period I frequently followed the yak and shot several large specimens of the animal. Its long hair, the longest on any animal, is its chief distinguishing feature. Some of the bulls weighed 1,500 pounds.

Yak inhabit the plateau of Thibet, probably extending northwards as far as the Kuen-Luen range, while eastwards they range into the Chinese province of Kansu, and westwards enter the eastern portions of Ladak, especially the regions in the neighborhood of the Chang-Chenmo valley and the great Pangkong lake. The greater portion of the country comprised within this extensive area is desolate and dreary in the extreme, but yak confine themselves to the wildest and most inaccessible portions of these regions, and are found only at great elevations, ranging in summer from about fourteen thousand to upwards of twenty thousand feet, and perhaps even more, above the level of the sea. They are at all times extremely impatient of heat, and delight in cold.

Although so large a beast, it thrives upon the coarsest pasturage, and its usual food consists of a rough wiry grass, which grows in all the higher valleys of Thibet, up to an elevation of nearly twenty thousand feet. Yak seem to wander about a good deal. In summer the cows are generally to be found in herds varying in numbers from ten to one hundred; while the

old bulls are for the most part solitary or in small parties of three or four. They feed at night and early in the morning, and usually betake themselves to some steep and barren hillside during the day, lying sometimes for hours in the same spot. Old bulls in particular seem to rejoice in choosing a commanding situation for their resting-place, and their tracks may be found on the tops of the steepest hills, far above the highest traces of vegetation. The yak is not apparently a very sharp-sighted beast, but its sense of smell is extremely keen, and this is the chief danger to guard against in stalking



A WHITE YAK

it. In the high valleys of Thibet, where so many glens intersect one another, and where the temperature is continually changing, the wind is equally variable. It will sometimes shift to every point of the compass in the course of a few minutes, and the best-planned stalk may be utterly spoiled.

When alarmed or expecting danger, the cows and older bulls place themselves in the van and on the flanks of the herds, with the calves in the center; but on the near approach of a hunter the whole herd will take to

flight at a gallop, with their heads down and their tails in the air. A wounded yak, whether cow or bull, will not infrequently charge.

The most distinctive peculiarity of the yak is the mass of long hair with which the flanks, limbs and tail are clothed, and which makes the general appearance of the animal so very different from that of other oxen. On the head and upper-parts of the body the hair is short and nearly smooth, and the long hair only commences on the lower part of the sides where it



BLACK AND WHITE YAK OF THIBET.

forms a fringe of great depth, extending forwards across the shoulders and backwards onto the thighs. On the tail the long hair is developed on the lower half, where it expands into an enormous tuft which does not generally reach below the hocks. There is also a tuft of long hair on the breast. The color of the hair is a uniform dark blackish brown, sometimes tending to a rusty tint on the flanks and back, and with a gray grizzle on the upper part

of the head and neck in very old individuals. Around the muzzle there is a little white. We frequently find the yak represented as a brown and white, or even a pure white animal, but all such specimens are domesticated, and mostly hybrid individuals.

When I visited a Thibetan monastery I was struck with the number of yak-tails suspended as streamers from tall poles fixed in the ground before the entrance. The more general use of these appendages throughout the East is, however, in the form of fly-whisks. For this purpose pure white tails are preferred; and they are frequently mounted with the twisted horn of a black-buck as a handle. In China yak-tails dyed red are affixed to the roofs of the residences as pendants.

Although the yak is timid and runs away at the approach of the hunter, I had a different experience with an old blackish bull yak that I wounded without killing. He charged at me with his head down, and was so close that I had little chance to run. I was in an open space, and there was not a tree in sight. Fortunately there was a large rock near by, and I ran behind it. The maddened yak dashed against the rock with such violence that its skull was fractured and it fell dead from the terrific shock.

There are many domesticated yaks in Central Asia. In some sections they are used at the plow, and can also be broken to ride, but they are usually vicious. Those used for riding are guided by the nose. In the summer the wild yaks shrink from the heat and make their homes on the loftiest plateaus of the mountains.



STORY OF THE PRAIRIE DOG.

“Yip, yip.”

As I heard this sound I turned my head and saw hundreds of small legs and whisking little tails disappearing in burrows. I was on the edge of a prairie dog town. The chief dog, or the “big dog,” as he is called, which governs every prairie dog town, had seen me. Instantly he gave the signal of alarm and all the inhabitants of the place dived into their burrows.

I concealed myself behind a clump of brush and waited patiently. Pretty soon a little head appeared at the entrance of one of the burrows and took a quick survey of the surroundings. Having satisfied itself that all danger was past, the little animal gave a shrill whistle and one by one the prairie dogs came from their holes in the ground and seated themselves upon their hind legs on the little mounds of earth in front of their burrows. Lying flat on the ground I took deliberate aim at one of the dogs and fired. A little cloud of dust was raised as the dogs skurried into their homes.

Nothing is more difficult than to get possession of the body of a prairie dog after it has been shot, although the wound may be mortal. Even when a bullet is put straight through their heads they are more likely to tumble into their burrows than to fall outside of them.

My shot went true. The bullet pierced the head of the little animal and it fell dead on the little mound of earth in front of its dwelling. Just as I was about to rise and secure its body one of its companions that had scampered into

its burrow at the sound of the rifle now reappeared, and seemingly reckless of all danger, seized the dead body and dragged it into the hole. Such an instance of intelligence and devotion touched me deeply, and from that day to this I have never shot a prairie dog.

The prairie dog, as it is popularly called, is found in plenty along the course of the Missouri river, and throughout the great section of country known as the American Southwest and its tributaries. It congregates in vast numbers, in certain spots where the soil is favorable to its subterranean habits of life and the vegetation is sufficiently luxuriant to afford it nourishment. The color



THE UNHAPPY FAMILY IN A PRAIRIE DOG BURROW.

of this animal is a reddish-brown upon the back, mixed with gray and black in a rather vague manner. The length of the animal rather exceeds sixteen inches, the tail being a little more than three inches long. The cheek pouches are about three-quarters of an inch in depth, and are half that measurement in diameter.

The prairie dog is a burrowing animal, and the spot on which it congregates is literally honeycombed with its tunnels. There is, however, a kind of order observed in the "dog-towns," as these warrens are popularly called, for the animals always leave certain roads or streets in which no burrow is made. The

affairs of the community seem to be regulated by a single leader, called the big dog, who sits before the entrance of his burrow, and issues his orders from thence to the community. In front of every burrow a small heap of earth is raised, which is made from the excavated soil, and which is generally employed as a seat for the occupant of the burrow.

As long as no danger is apprehended the little animals are all in lively motion, sitting upon their mounds, or hurrying from one tunnel to another, as eagerly as if they were transacting the most important business. Suddenly



A PRAIRIE DOG TOWN IN COLORADO.

a sharp yelp is heard, and the peaceful scene is in a moment transformed into a whirl of indistinguishable confusion. Quick barks resound on every side, the air is filled with a dust-cloud, in the midst of which is indistinctly seen an intermingled maze of flourishing legs and whisking tails, and in a moment the populous "town" is deserted. Not a dog is visible, and the whole spot is apparently untenanted. But in a few minutes a pair of dark eyes are seen gleaming at the entrance of some burrow, a set of glistening teeth next shine through the

dusky recess, and in a few minutes first one, and then another prairie dog issues from its retreat, until the whole community is again in lively action.

The title of prairie dog has been given on account of its sharp, yelping sound, which has some resemblance to the barking of a peevish lapdog. This peculiar sound is evidently employed as a cry of alarm; for, as soon as it is uttered, all the prairie dogs dive into their burrows, and do not emerge again until they hear the shrill whistle which tells them that the danger is past. Being so wary an animal, it is with difficulty approached or shot; even when severely wounded it is not readily secured, owing to its wonderful tenacity of life. A bullet that would instantly drop a deer has, comparatively, no immediate effect upon the prairie dog, which is capable of reaching its burrow, even though mortally wounded in such a manner as would cause the instantaneous death of many a larger animal. A tolerably large bullet through the brain seems to be the only certain method of preventing a prairie dog from regaining its stronghold. The mode by which this animal enters the burrow is very comical. It does not creep or run into the entrance, but makes a jump in the air, turning a partial somersault, flourishing its hind-legs and whisking its tail in the most ludicrous manner, and disappearing as if by the magic of a conjurer.

The burrows of the prairie dog are generally made at an angle of forty degrees, and after being sunk for some little distance run horizontally. It is well known that these burrows are not only inhabited by the legitimate owners and excavators, but are shared by the burrowing owl and the rattlesnake. According to popular belief, the three creatures live very harmoniously together; but careful observations have shown that the snake and the owl are interlopers, living in the burrows because the poor owners cannot turn them out of their hiding-places, and finding an easy subsistence on the young prairie dogs.

In Europe and Asia the prairie dog is known by its zoological name, the marmot. The best known are the Alpine marmot, inhabiting the Pyrenees, Alps and Carpathian Mountains, and the bobac marmot, found on the frontier of Germany and ranging eastwards through Galicia and Poland, across the steppes of Southern Russia, and so on to Amurland, Kamschatka, and Siberia; the climate of these regions being cold enough to admit of the existence of marmots at low elevations. In Lapland and Scandinavia, marmots are quite unknown.

In Asia one of the best known is the short-tailed Himalayan marmot, which is nearly allied to the bobac, but of somewhat larger size. Its range

extends from the mountains of Yarkand and other parts of Turkestan to Ladak and Eastern Thibet, where it is usually found at elevations of from twelve thousand to thirteen thousand feet. The largest and handsomest of the Old World group is, however, the long-tailed red marmot, in which the length of the head and body is about twenty-four inches, and that of the tail fully half as much. The Alpine marmot is twenty inches, and the bobac fifteen. The Himalayan marmot may be met with on the mountain-



A FAMILY OF BOBACS.

ranges to the north of the valley of Kashmir, and thence to Gilgit in one direction, and parts of Ladak in the other, while it is also said to extend far into Central Asia. Other kindred but smaller species are the Cabul marmot from Northern Afghanistan, and the golden marmot from the mountains to the west of Yarkand.

The districts inhabited by all the marmots of the Old World are desolate

and barren; being in most cases scorched with fierce heat in summer, while in winter they are subject to intense cold. In the Himalaya, these animals are not met with until the traveler has crossed the wooded outer ranges, and entered the bleak Thibetan districts.

The habits of all the marmots of the Old World are very similar; all of these animals living in large companies, and excavating burrows in which they pass the whole of the winter buried in slumber. Indeed, marmots seem to be the most thoroughly hibernating of all animals, since their sleep is apparently unbroken, and they lay up no store of winter food. Their food is purely of a vegetable nature, consisting mainly of roots, leaves, and seeds of various plants. In the Himalaya the burrows are very generally constructed beneath the shelter of a plant of wild rhubarb; and the tenants on a fine day take up their station on the mound at the entrance, or journey for a short distance in search of food. At the least alarm, they rush at once to the entrance of their burrow, when they sit up on their hind-quarters to survey the scene and detect the danger. If the enemy approach too close, the loud whistling scream is uttered, and the animal dives headlong into its burrow, to reappear after a time and see if the coast is clear. Both in the Alps and Himalaya marmot-warrens are situated in exposed situations, generally where there is a considerable open space, and which in winter are deeply buried in snow. In the case of the Alpine species, the winter-quarters are made in large burrows, each with a single entrance, and terminating in an extensive chamber lined with grass; such chambers frequently containing as many as from ten to fifteen occupants during the winter, all lying closely packed together.

The flesh of marmots is of good flavor, and is largely consumed by the inhabitants of the Siberian steppes, who as soon as the bobac reappears in spring, after its winter sleep, organize a regular system of hunting. In shooting marmots it is essential that they should be killed at the first shot, as the sportsman is only able to come within range when they are sitting at the mouths of their burrows, and if only wounded, no matter how severely, they are well-nigh sure to have sufficient power left to struggle down. Marmots in the Himalaya will generally reappear after being fired at once, but after a second fright they are seldom seen again on that day.



STORY OF THE WILD BOAR.

The wild hog, or boar, inhabits many parts of Europe, especially the forests of Germany, where the chase of the wild boar is a common amusement. It has become extinct in this country for many years. Its tusks are terrible weapons, and capable of being used with fatal effect. They curve outwards from the lower jaw, and are sometimes eight or ten inches in length. In India, where the boar attains to a great size, the horses on which the hunters are mounted often refuse to bring their riders within spear stroke of the infuriated animal, and I have seen it kill a horse, and severely injure the rider with one sweep of its enormous tusks.

The wild boar is distinguished by a body generally of dusky-brown or grayish color, having a tendency to black, and being diversified with black spots. The front teeth or tusks in the male are long and powerful, and project beyond the upper lip, the mouth is large, and the elongated head is set on a short neck rising out of a thick and muscular body. The size is variable, an old wild boar, measured by a hunter, being five feet nine inches long, while a four-year-old of the more ordinary size measured three feet without the tail. The female is smaller than the male and with smaller tusks. The hairs of the body are coarse, intermixed with downy wool. On the neck and shoulders the hair takes the form of bristles, being long enough to be called a kind of mane which the animal is enabled to erect if

irritated. The young has the body marked with stripes of a reddish color running lengthwise.

The lower tusks of the male wild boar, which project about three inches from the jaw, and are kept with edges as sharp as razors by wear against those of the upper jaw, are most formidable weapons, capable of ripping open a horse at a single stroke. Both the European and the Indian species are among the boldest and fiercest of all animals, charging men, horses, or elephants time after time without a moment's hesitation, and in spite of the most desperate wounds. Indeed, the injuries that a wild boar will sustain



EAST AFRICAN WILD HOG.

without loss of life are perfectly marvelous. I once killed an old boar, in the skull of which the broken extremity of the tusk of another boar was firmly embedded, with its point penetrating into the brain-cavity a short distance behind the left eye.

Although the speed of a wild pig is considerable, yet it cannot be maintained for any long distance, and accordingly, either a boar or a sow may be easily overtaken by a well-mounted horseman after a comparatively short

run. Both as regards speed and inclination to fight there is, however, considerable local variation among the wild pigs of India; the large, heavily-built animal found in Bengal being much more disposed to show fight than the lighter pig of the Punjab, which has a greater turn of speed. In spite of its boldness, the Indian wild boar seldom makes unprovoked attacks; but when once roused nothing will stop it. An instance is on record of a boar charging, overthrowing, and ripping open a camel; and there are several



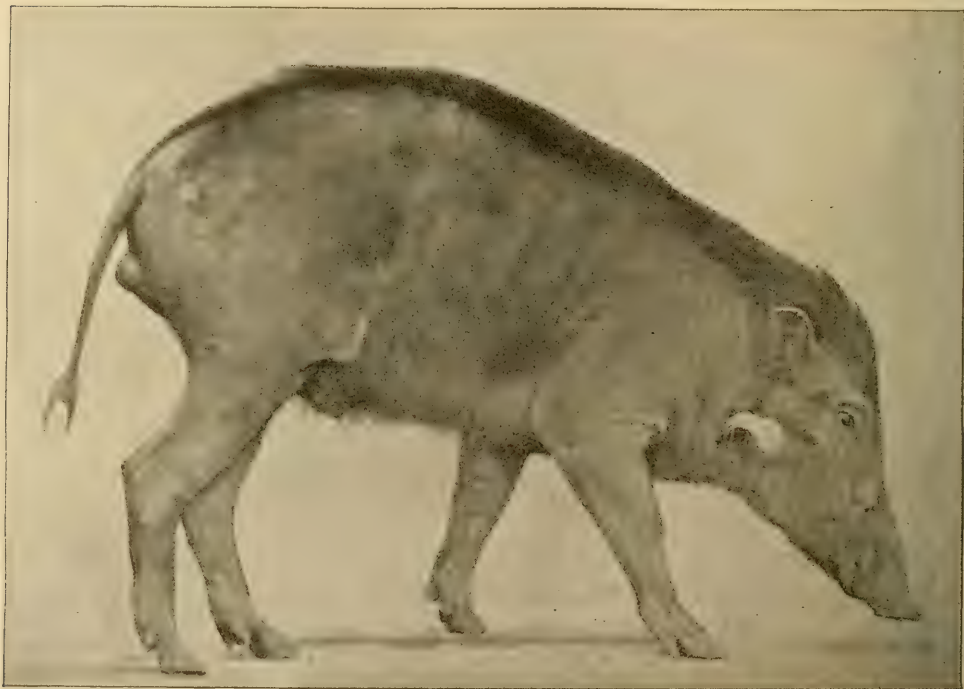
A FAMILY OF WILD HOGS.

well-authenticated cases of boars having attacked and killed or beaten off tigers.

The curious Japanese masked pig has an extraordinary appearance, from its short head, broad forehead, and nose, great fleshy ears and deeply-furrowed skin. Not only is the face furrowed, but thick folds of skin, which are harder than the other parts, almost like the plates on the Indian rhinoc-

eros, hang about the shoulders and rump. It is colored black, with white feet, and breeds true. That it has long been domesticated there can be little doubt; and this might have been inferred even from the circumstance that its young are not longitudinally striped.

The extraordinary development of the tusks in the males of the animal to which the Malays have given the name of Babirusa (meaning pig-deer) is so remarkable as to suggest at first sight the idea of a malformation. The babirusa, which is an inhabitant of Celebes and Bornu, and is the sole repre-



WILD HOG OF THE PHILIPPINES.

sentative of its genus, has, indeed, derived its name from these abnormally-developed tusks, which have led the Malays to liken them to the antlers of the deer. In the boars the upper tusks, while curving upwards like those of an ordinary wild pig, instead of protruding from the margins of the jaws, arise close together near the middle line of the face, and thence, after being directed upwards for a short distance, sweep backwards, frequently coming into contact with the surface of the forehead, and are then finally directed

forwards at the tip. The lower tusks have the same upwards-and-backwards direction as those of the upper jaw, but are frequently less strongly curved, although in other cases the direction of their sweep is not very different from that of the latter. The upper tusks occasionally attain a length of fourteen and one-half inches, exclusive of the portion buried in the socket.

It is a popular belief that pigs are never injured by the poisons of snakes; and it is customary to turn a drove of these animals into a district infested



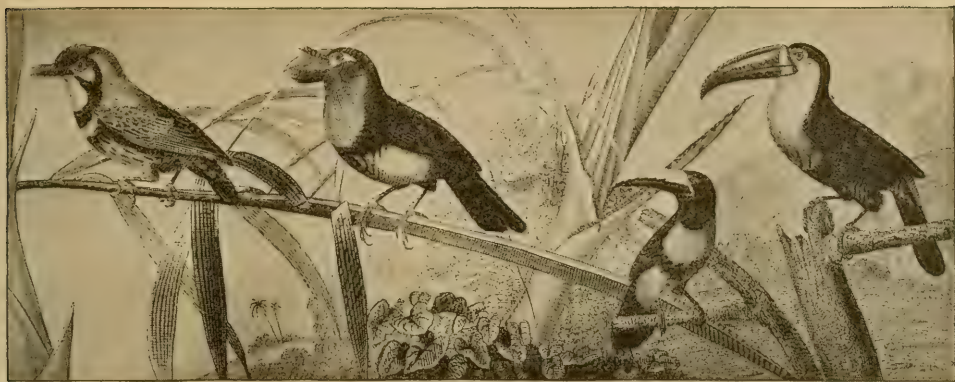
SOUTH AFRICAN WILD HOG.

by such reptiles, which in a short time is usually completely cleared of them. It is well known that pigs will destroy any rattlesnake they meet with, and this serpent is certainly provided with one of the most deadly of poisons, and it is a reptile not at all likely to submit to an attack from any quarter without using all its powers of defense. It is supposed that the pig receives the bite of the enraged snake on its cheek, where the fat and

gristle are the thickest, and that, as there is little or no blood in that part, the poison is not carried through the system, so that the animal experiences no ill-effects from the virus. Whenever a serpent is spied, the pig, with erected bristles, rushes right upon it, and, indifferent to the formidable fangs that are perhaps sticking in its own hide, bites the reptile in pieces and then devours it.

I once witnessed a hunt for babirusa by the natives of Celibes.

The animals being driven into a curral with a V-shaped opening and flanked by netting, we had plenty of time to wait before the sport began, and meanwhile the natives arranged themselves at their posts. One stood at the door of the curral, ready to close it directly any animal rushed in; others took up their places on either side of the wide entrance, while the remainder crouched in front of the long net at intervals of a few yards, each grasping his spear, and hidden from view by a huge *Livistonia* (a kind of palm) frond. We had not long been settled before a peculiar barking grunt in the distance announced the arrival of the first victim. Everyone was instantly motionless, and directly afterwards a dark object dashed up at great speed and buried itself in the net a short way down the slope. There was a short struggle, and in less than five minutes the captive, a full-grown female babirusa, was quietly reposing on her back, with her legs tied together with rattan, and we were once more in ambush for the next comer. We were hardly quiet before the same peculiar sound was heard rapidly approaching, and the next moment a magnificent old boar babirusa rushed past within five yards of us, and plunged into the net between our tree and the entrance to the curral. His long tusks became entangled in the meshes, and the natives ran up to spear him. Just at this moment, however, he broke loose, and, turning on his antagonists, scattered them in all directions. It was a most determined charge, and, as we were unable to fire for fear of hitting some of our own men, it might have proved a serious affair for the native he singled out. After some trouble the animal was, however, finally despatched with a spear-thrust, but, even with four spears buried in his body, the old boar died game, striving to the very last to get at his antagonists.



STORY OF THE PORCUPINE.

I have a great deal of respect for the porcupine, and I have noticed that his fellow animals have a like feeling toward him. In the first place, he doesn't meddle with the affairs of others and he very quickly resents any attempt to meddle with his affairs. He rarely hunts for a fight and he never runs away from one. In all of the animal kingdom I do not believe there is a more fearless creature.

Conscious of his own powers of defense he seems to have a contempt for other animals. In Africa and India tigers and leopards attack him and often kill him, but only after a hard fight, in which they receive many wounds, which sometimes prove fatal, from his long spines, called quills. In Western America I have known a mountain lion (puma) to die of wounds received in a fight with a porcupine. The wounds suppurated, causing blood-poisoning, resulting in death. The other animals know that the porcupine is not afraid of them and that he is always ready to fight—hence they respect him and usually leave him alone.

The porcupine has long been rendered famous among men by the extraordinary armory of pointed spears which it bears upon its back, and which it was formerly fabled to launch at its foes with fatal precision. This remarkable power of the rugged little creature has been thoroughly exploited and is attributable to a real fact, of which few writers take cognizance. When attacked the porcupine prepares for defense by rolling itself into a ball,

exposing the bristles, but with its feet ready for action. When the assailant has approached sufficiently near, the active little animal darts forward, hurling itself against the attacking animal. The spear-like quills find lodgement in the skin of the assailant, causing in every case a hasty retreat.

This animal inhabits many parts of the world, being found in Africa, Southern Europe and India. The spines, or quills, with which it is furnished, vary considerably in length, the longest quills being flexible and not capable of doing much harm to an opponent. Beneath these is a plentiful supply of shorter spines, from five to ten inches in length, which are the really effective weapons of this imposing array. Their hold on the skin is very slight, so that when they have been struck into a foe, they remain fixed in



PORCUPINES OF SIAM.

the wound, and, unless immediately removed, work sad woe to the sufferer. For the quill is so constructed that it gradually bores its way into the flesh, burrowing deeper at every movement, often causing the death of the wounded creature.

In Africa and India leopards and tigers have frequently been killed, in whose flesh were pieces of porcupine quills that had penetrated deeply into the body, and had even caused suppuration to take place. In one instance, a tiger was found to have his paws, ears and head filled with the spines of a porcupine, which he had been vainly endeavoring to kill.

As I have said, conscious of its powers, the porcupine is not at all an

aggressive animal, and seldom, if ever, makes an unprovoked attack. But if irritated or wounded, it becomes at once a very unpleasant antagonist, as it spreads out its bristles widely, and rapidly backs upon its opponent.

I have witnessed the successful defense of the animal on a number of occasions. Being one moonlight night with a party in search of porcupines with dogs, we had not been out long ere we discovered a hole inhabited by these quadrupeds. A dog was immediately put to it. The animal had not gone many paces, when he howled and retreated with several quills in his body. One in particular was driven an inch into his right leg. The porcupine, on the approach of the dog, drew itself into the shape of a ball, and, darting forward with all its strength, drove its quills into the dog. We were



PORCUPINES OF MOROCCO.

forced to give up the fight, and the porcupine saved his life by the desperate fight made against our dogs.

The total length of the common porcupine is about three feet six inches, the tail being about six inches long. Its gait is plantigrade, slow and clumsy, and as it walks its long quills shake and rattle in a very curious manner. Its muzzle is thick and heavy, and its eyes small and piglike.

The American Indians use the quills extracted from the Canada porcupine, a species living on trees, for ornamenting various parts of their dress, especially their moccasins or skin shoes. The length of this species is about two feet. It is found in many parts of the United States as well as in Canada.

It is capable of depressing the bristling spears, and can squeeze itself through an opening which would appear at first sight to be hardly large enough to permit the passage of an animal of only half its size.

When one of these animals has selected and settled himself in a tree to his liking, he may not leave it, day or night, until he has denuded it of the whole of its foliage. I have seen many hemlocks thus completely stripped, not a green twig remaining, even on the smallest bough. It seems incredible that so large and clumsy an animal should be able to climb out far enough on the branches of trees to reach the terminal leaves; but he distributes his weight by bringing several branches together, and then, with his powerful paws, bends back their ends and passes them through his mouth. When high in the tree-tops he is often passed unnoticed, mistaken, if seen at all, for the nest of a crow or a hawk.

The Mexican tree-porcupine belongs to a family which has hair so long as almost to conceal the spines. It is easily distinguished by the uniform black color of the fur, and also by the presence of numerous spiny bristles mingled with the hair of the lower parts of the body. These bristles arise in small clusters, and being white for the greater part of their length, form star-like spots among the dark fur. These bristles and the spines on the back are black at the tips.

This species inhabits the forests on the eastern coasts of Mexico. Nothing special is recorded of its habits; but from observations made on captive individuals it is probable that none of the tree-porcupines ever drink. It is stated that in those long-haired species in which the fur is of a grayish tint, the general appearance of the animal when reposing on the arm of a tree closely resembles a gnarled and lichen-clad knot.

The brush-tailed porcupine, of which one species inhabits Western and Central Africa, and the other Burma and the Malayan region, are much smaller and more rat-like animals than the true porcupines, from which they are distinguished at a glance.

A species of porcupine has been discovered in Borneo, distinguished by its short spines.

From the large size of their teeth and jaws, porcupines have great gnawing powers, and the writer has seen in India tusk of elephants which have been half-eaten by these animals as they lay in the jungles. The flesh of porcupines is excellent eating, and resembles something between pork and veal in flavor.



THE STORY OF THE HIPPOPOTAMUS.

It is related of a former United States Senator from Ohio that he was one day at a circus and menagerie, where he was watching the feeding of the hippopotamus, when a party, among whom was a dentist, approached. The dentist laughingly said:

“Many’s the time I took molars like that fellow has, and put them in the mouths of my patients.”

Pressed to explain what he meant, he stated that the tusks of the hippopotamus were of finest ivory and used in making false teeth. The Senator had been an attentive listener to the conversation, and suddenly he was seen to shudder and turn pale. Reaching into his mouth he took out a plate, and, passing it to the dentist, asked whether the teeth in it were made from the hippopotamus’ tusks. When he was assured they were, he refused to replace them, and never again wore false teeth. A peculiar lisping prevented his making speeches after that, but no amount of persuasion sufficed to overcome his disgust at the teeth.

The hippopotamus is generally spoken of as a river horse, because that is the translation of its Greek name, but “river hog” would be a more truthful description.

Hippopotami are bulky animals, with round, barrel-like bodies of great

length, very short and thick legs, and enormous heads. Indeed, the ugly head of a hippopotamus appears as if it were too large and heavy for its owner, since the animal may frequently be seen resting its ungainly muzzle on the ground, as though to relieve the neck from the strain of its weight.

There is, in all probability, but one species of the hippopotamus. It inhabits Africa exclusively, and is found in plenty on the banks of many rivers in that country, where it may be seen gamboling and snorting at all times of the day.

These animals are quiet and inoffensive while undisturbed; but, if attacked, they unite to repel the invader, and I have known them to tear several planks from the side of a boat, and sink it. They can remain about five or six minutes under water, and, when they emerge, they make a loud and very peculiar snorting noise, which can be heard at a great distance.

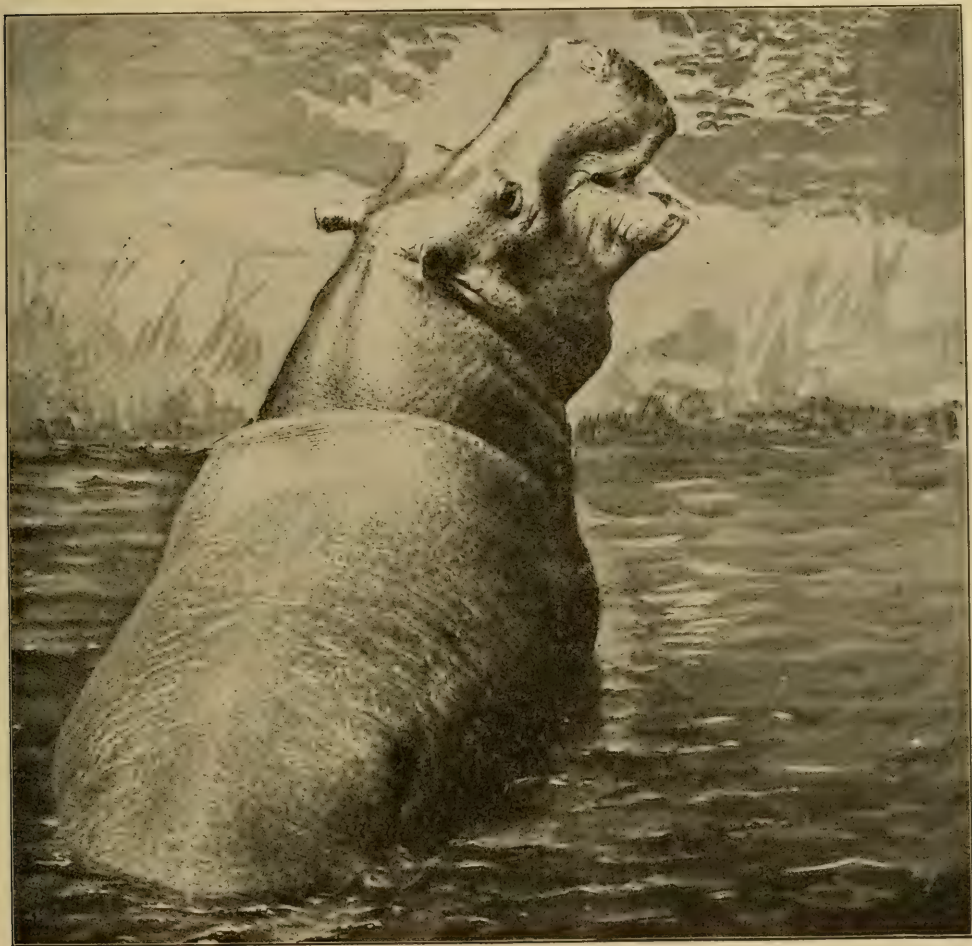
In size the full-grown hippopotamus is equal to the rhinoceros. In form it is uncouth, the body being extremely large, fat, and round; the legs are very short and thick; the mouth extremely wide, and teeth of vast strength and size. The eyes and ears are small. The whole animal is covered with short hair, thinly set, and is of a brownish color. The hide is in some parts two inches thick, and not much unlike that of the hog.

From the unwieldiness of his body, and the shortness of his legs, the hippopotamus is not able to move fast upon land, and is then an extremely timid animal. If pursued it takes to the water, plunges in, sinks to the bottom, and there walks at ease. It cannot, however, continue long without rising for air, though, if threatened with danger, it does this so cautiously that the place where its nose is raised above the surface of the water is scarcely perceptible.

If wounded, the hippopotamus will rise and attack boats or canoes with great fury, and will often sink them by biting large pieces out of their sides. In shallow rivers it makes deep holes in the bottom, in order to conceal its great bulk. When it quits the water it usually puts out half its body at once, and smells and looks round; but sometimes rushes out with great impetuosity, and tramples down everything in the way. During the night it leaves the rivers to feed on sugar-canes, rushes, millet or rice, of which it consumes great quantities.

The Egyptians are said to adopt a singular mode of destroying this voracious animal. They mark the places it frequents, and there deposit a quantity of peas. When the beast comes ashore, hungry and voracious, it eagerly devours the peas, which causes a thirst. It then rushes into the

water, and drinks so copiously that the peas in its stomach, being fully saturated, swell so much as soon afterwards to cause his death. Among the Kaffirs in the south of Africa the hippopotamus is sometimes caught by means of pits.



THE HIPPOPOTAMUS.

The gait of this animal, when undisturbed, is generally so slow and cautious that it often smells out the snare, and avoids it. The most certain method is to watch at night, behind a bush close to its path, and strike it in the knee joints with a sword.

The ancient Egyptians were in the habit of harpooning the hippopotamus, and this custom is still kept up by the Sudanis on the upper Nile. The usual plan when a party of these animals has been observed in the river, is for a couple of hunters, each armed with a harpoon to which a line is attached, to enter the river some distance above, and swim cautiously down on the herd. When within striking distance, both men hurl their weapons at the same time. To each is attached a wooden float, which marks the position of the animal while below the surface, and the chase is taken up by other hunters on the bank armed with harpoons and lances. By an ingenious arrangement, the float is at length captured by a rope and the animal dragged to shore, where it is despatched with lances. This, however, is frequently not accomplished without the death of one or more of the intrepid hunters. In Central Africa, on the other hand, the hippopotamus is harpooned from canoes. In other parts the favorite method is to suspend a weighted spear, frequently tipped with poison, over a branch of a tree near the tracks of the hippopotamus, and to make fast the end of the line, to which it is attached to stakes on either side of the path. When the animal comes along, it strikes against the line, the stakes are loosened, and the heavy spear comes down with a thud on its head or back.



THE STORY OF THE JACKAL.

In India lives a wolf-like creature called the jackal, which gives a peculiar wailing howl. As the animal is known to feed on dead bodies, the Anglo-Indian version of its howl is as follows: "Dead Hindoo! where, where, where!" The jackal has another howl or cry used only when in the vicinity of a tiger. I have heard both cries and they are the most peculiar that I can recall. There is a fable, religiously believed by the natives of India, that the jackal acts as a scout for the lion, and that the king of beasts shares the prey with his smaller friend. This took its origin from the fact that the lion, after eating his fill, leaves the remainder of the carcass, and the skulking jackal, finding it, makes his meal from the leavings.

The jackal is well known both as a prowler and a scavenger, in which capacity he is useful, and as a disturber of our midnight rest by his horrible yells, in which peculiarity he is to be looked upon as an unmitigated nuisance. He is mischievous, too, occasionally, and will commit havoc among poultry and young kids and lambs; but, as a general rule, he is a harmless, timid creature, and when animal food fails, he will take readily to vegetables. The jackal sometimes feeds on dead bodies, which it digs out of the shallow graves made by the natives, and I once came across, in the vicinity of a jungle village, the dead body of a child that had been unearthed by a jackal.

The jackal can be tamed, and I once had several with me in an interior village of India.

One of these would answer to its name, and was remarkable for the cleanliness of its habits, being particularly averse to getting its feet wet by rain, seeking during showers the shelter of the huts. As a rule, it never sat down on its haunches after the manner of a dog, but would lie at full length, with its nose resting between its fore-paws, and would generally select a sunny spot, where it lay blinking in the sunlight.

The black-backed jackal is a very distinct African species. The adults



THE EUROPEAN JACKAL.

of both sexes are brightly colored, the sides of the body being red, the limbs and the upper part of the tail reddish yellow; while the back of the body and the end of the tail are black. The individual hairs of the body are ringed with black and white or red and white, so as to produce a speckled appearance in the fur. The under parts of the body and the inner sides of the limbs are nearly white, the ears and part of the face being yellowish brown. This striking coloration occurs, however, only in the full-grown jackals, the fur

of the young being a uniform dusky brown. The dark band on the neck so often found in the common jackal is absent. The ears are very long.

This jackal is found both in the open country and in bush jungle. In the sandy regions on the shores of the Red Sea it is to be found frequently in the small thickets covering the banks of the ravines, which swarm with hares and pangolins, upon which the jackal feeds. At night it visits the villages of the natives, and in Somaliland it is stated to bite off the fat tails



ARABIAN WOLF JACKAL

of the sheep. In the Sudan it lives chiefly upon the smaller antelopes, mice, jerboas and other rodents.

The Asiatic jackals vary considerably in point of size, the length of the head and body varying from two to two and one-half feet. Its general color is a pale grayish, with a larger or smaller admixture of black on the upper parts. The under parts are paler, and the muzzle, ears and the outer sides of the limbs more so than the rest. The reddish brown hairs

of the tail have long black tips, thus forming a distinct black tip to the tail itself. The African variety is of rather larger size, with relatively longer ears; and the sides of the body are grayer. Occasionally yellow, black and white varieties of the jackal have been met with, the latter being true albinos.

The jackal ranges from the southeastern countries of Europe to India and Ceylon; thence it extends through Assam to Northern Pegu and the neighborhood of Mandalay, although it is much less common east of the Bay of Bengal than in India. In Northern Africa it inhabits Egypt and Abyssinia, and the districts to the north of the Sahara. In the Himalaya



JACKALS OF SIAM

it ascends to from three to four thousand feet above the sea level. Throughout India it may be found indifferently in hilly or plain country, in forest or open districts, or in large cities.

Although jackals are frequently in the habit of going singly or in pairs, they often associate in packs, which may be of considerable size; these assemblages being more frequent at night than during the daytime. In India the jackal's wanderings are by no means confined to the night.

In extremely hot weather they appear to suffer much, and may be found either lying in the water, where they spend most of the day, or sneaking away therefrom, instead of being, as usual, hidden away in their holes.



THE STORY OF THE TAPIR.

In South America I shot any number of that queer animal which forms the connecting link between the elephant and the hog, which bears a close resemblance to a rhinoceros and which is called a tapir. The snout is lengthened into a kind of proboscis, or trunk, like the elephant's but is comparatively short.

It was my fortune to witness the method by which the jaguar kills a tapir, for next to man the big spotted cat is the deadly foe of that animal.

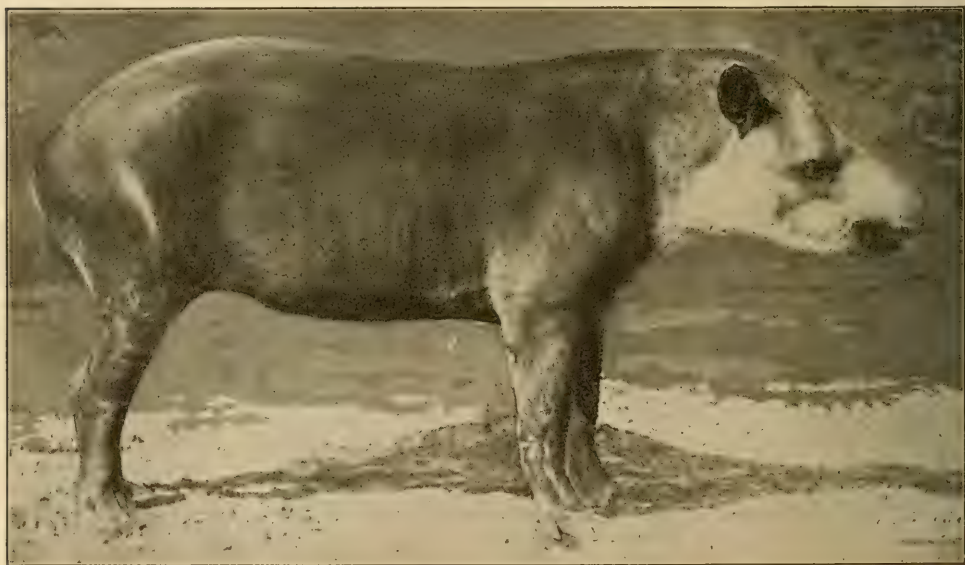
With my native hunters, I was following the course of a small river, expecting at every moment to come upon a tapir asleep. It was getting late in the evening and was time for the animals to be moving about in search of food.

Suddenly my Indian guide put up his hand in warning, and I took it as a sign that we were near the game. I stopped and peered ahead through the tall weeds and undergrowth, and could scarcely repress an exclamation of surprise at what I saw. Stretched upon the low limb of a tree near the river bank, was the most beautiful specimen of a jaguar I had ever seen. It was crouched, ready to spring, and its long tail was swaying back and forth.

My gun went to my shoulder, but before I had taken aim the jaguar gathered itself and sprang into the reeds. At the same moment a loud grunt and shrill whistle broke the stillness, and a huge tapir with the jaguar clinging by its sharp claws to the animal's back went tearing through the

tall reeds. The terrified tapir was running toward some thick underbrush, evidently with the hope of dislodging the jaguar. The big cat had fastened its teeth in the back of the tapir's neck, but had not reached a vital spot. If the tapir could succeed in reaching the thick undergrowth it possibly could scrape the jaguar off its back. Myself and my men followed as fast as we could. Once I thought the tapir would shake the jaguar off, but the latter got a fresh grip with its jaws, this time on the under part of the tapir's neck.

Just as they reached the edge of the thick underbrush, the poor tapir fell upon its knees with the jaguar still clinging to its throat and drinking



A SOUTH AMERICAN MOUNTAIN TAPIR.

its life blood. The rest of the struggle was brief, and the tapir quickly succumbed.

The jaguar had been so intent upon its prey that it had neither seen nor heard us. But now that the battle was over, it was more alert, and a slight motion of the reeds made by one of my native hunters attracted its attention. It raised its head, stained with the tapir's blood, and uttered its characteristic snarl.

I did not wish to take any chances on such a magnificent animal escaping me, and as its head was raised I fired and my bullet found its brain.

There are many species of the tapir. The American tapir is common enough in the hot countries of South America. Another is met with in the most elevated regions of the Cordilleras, and the Andes. A third inhabits the forests of the island of Sumatra, and the peninsula of Malacca.

The American tapir is seen on the borders of rivers. It sleeps during the day, and wanders about at night in search of its food, which consists of water-melons, gourds, and other vegetables. It is very fond of the water, and can remain below the surface for a considerable period. It is a very powerful animal, and, as it is furnished with a thick hide, it plunges through



THE MALAYAN TAPIR.

the brushwood, breaking its way past any obstacles that may oppose its progress.

Although in general perfectly harmless animals, fleeing precipitately before the smallest dog, tapirs will sometimes attack their enemies fiercely, this being more especially the case with females that have been deprived of their young. In such instances they rush violently at their foes—human or otherwise—and after knocking them down will trample upon and bite them after the manner of wild swine.

The Malayan tapir is the largest of the whole group, and differs from all

the others in its parti-colored skin. In height this animal stands from three to three and one-half feet at the withers, and about four inches more at the rump, its length along the curves from the tip of the snout to the root of the tail being about eight feet.

They are fond of gamboling in the water and rolling in soft mud, their hides being often thickly plastered with the latter, probably as a protection against the bites of insects. Indeed, in many respects their mode of life is very similar to that of swine, although in their more solitary habits they present a closer resemblance to their cousins the rhinoceroses. Thus the males, except during the pairing-season, are said to be completely solitary, and even family parties are but rarely met with; and, except when several have been temporarily collected by the attraction of unusually good pasture, it is but very seldom that more than three individuals are seen in company. Tapirs commence to feed in the evening, and probably continue throughout the greater part of the night.

These animals are slow and deliberate in their movements, and I have often seen them walking with their snouts close to the ground, and by the aid of scent or sound detecting the presence of foes with extreme acuteness. When frightened, however, they rush blindly forwards, crashing through bushes or splashing through water in precipitate flight. The tapir is an excellent swimmer, crossing the largest rivers with facility, and even diving beneath the surface of the water, although with what object is not ascertained. Not improbably it may also walk along the beds of shallow rivers and lakes, as was observed to be the habit of a specimen of the Malayan species kept in captivity at Barrakpur.

The chief sound uttered by the American tapir is a peculiar shrill whistle, which has but little volume in comparison with the size of the animal by which it is emitted. This whistle is uttered at all seasons, and is not, as has been supposed, restricted to the pairing-season; the Malayan species give vent to a very similar sound. When suddenly disturbed, the American tapir utters a loud snort.

In some parts the South American Indians track the tapir to its lair, and shoot it as it lies. In Paraguay, when the hunters capture a young tapir of too large a size to be carried on a horse in front of the rider, they bore a hole in one side of the snout through which they pass a thong, and the animal will then follow readily enough when led.

Next to man, the worst foes of the tapir are the larger cats; the jaguar preying largely on the American species, and the tiger attacking its Malayan

cousin. When an American tapir is attacked by a jaguar, it immediately rushes into the thickest cover in the hope of dislodging its assailant, which, from the thickness of the animal's hide, is unable to obtain a firm hold on its back. The tapir is not unfrequently successful; and many of these animals are killed with the marks of jaguar's claws on their backs.

It is now settled that there are several distinct kinds of tapirs to be found in Central and South America. The common tapir is only found in the low, hot regions, and rarely higher than an elevation of three thousand feet, but a more hardy species, known as the "mountain tapir," ranges on



A BROWN TAPIR OF CENTRAL AMERICA.

the eastern side of the Andes Mountains at an altitude of seven and eight thousand feet.

The brown tapir is never found outside of Guatemala, Nicaragua and Costa Rica, and more nearly resembles a swine than any of the other species. The common tapir is almost black, while the species to which I am referring has hair of a light brown color. It differs from the common tapir in other respects—the skull, nose, etc.—which differences are of more interest to scientists than to the lay reader.

The Malayan tapir exceeds all others in coloration—in fact, no other animal is so strongly marked except the zebra. It is black from the end of its long snout, or short trunk, to a point behind the shoulders. From the shoulders to the hind-quarters it is pure white. The hind-quarters and legs are black. While full-grown tapirs are handsome in color contrasts, the young are handsomer still, and present a more varied scheme of coloration. In point of color they are among the handsomest of animals.

When the young of the Malayan tapir are born they are brownish and velvety black, marked with spots and stripes of brownish yellow and white on the sides of the body, the same as in the young of the wild boar. The Malayan tapir is also distinguished from the American tapir by the longer and more slender trunk and by the absence of the sinewy fatty comb on the neck and head, reaching to the ears in the American species.

The Malayan tapir is found in the peninsula from which it takes its name, extending northwards to Tenasserim, and it also occurs in the island of Sumatra, and perhaps in Borneo.

Owing to its retiring nature, the Malayan tapir is but seldom seen in its native haunts, and our information as to its habits is consequently meager in the extreme. Indeed, nothing is known as to its breeding habits, although it seems to be ascertained that but one young is produced at a birth.

Though seen so rarely, the tapir is by no means uncommon in the interior of the Tavoy and Mergui provinces. I have frequently come upon its recent footmarks, but it avoids the inhabited parts of the country. When taking to the water, it is reported to plunge in and walk along the bottom, instead of swimming. In spite of its shy and retiring habits, this tapir, if captured at a sufficiently early period, can be readily tamed and is said to exhibit considerable attachment to its master.

The young of the American tapirs are striped and spotted after the manner of the Asiatic species.



THE STORY OF THE MONKEY.

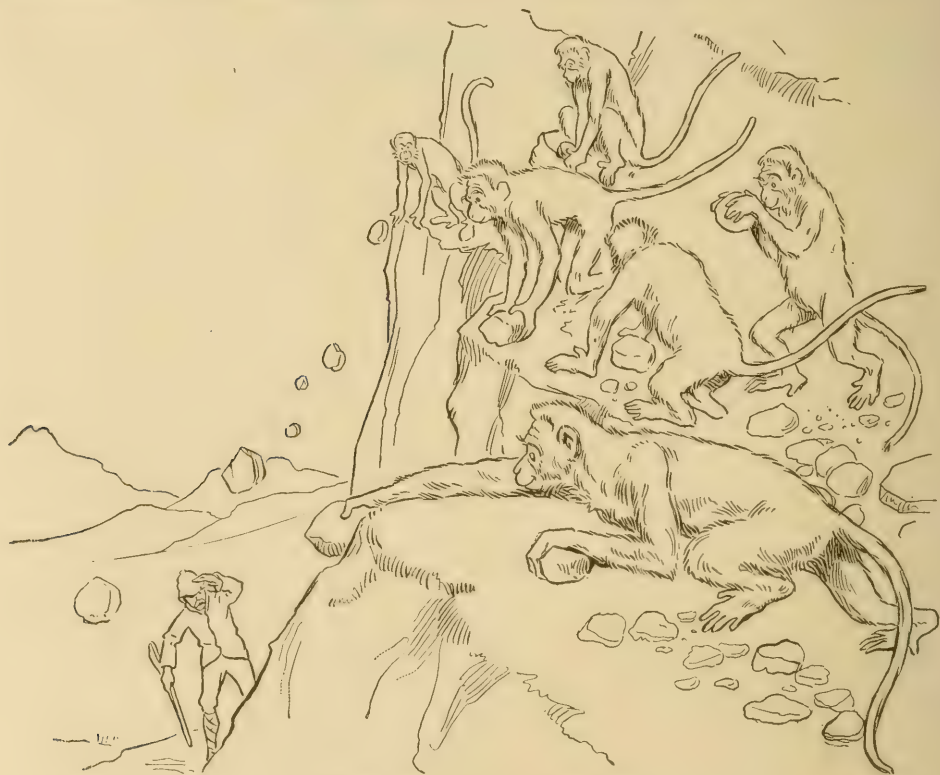
The proverb "mischievous as a monkey" reveals the estimation in which monkeys commonly are held. The more or less human-like form, the frequent tendency to assume an upright position, coupled with their hand-like feet are amply sufficient to distinguish the group to which these animals belong from all others.

The peculiar traits of the monkey, which have made this class of animals the most interesting to the children and a source of amusement to their elders, are an interesting study.

A neighbor of mine had a monkey of which he was very fond and the little pet used to love to sit on his master's shoulder. It showed, nevertheless, a great dislike to strangers, and was not on good terms with any other member of my friend's household. My neighbor had started from home one morning without taking the monkey with him, and the little creature having missed its friend, and concluded, as it seemed, that he would be sure to come to me, both being in the habit of paying me a daily visit together, came straight to my dwelling, taking a short cut over gardens, trees, and thickets, instead of going the roundabout way of the street. It had never done this before, and we knew the route it had taken only from a neighbor having watched its movements. On arriving at my house, and not finding its master, it climbed to the top of my table, and sat with an air of quiet resignation waiting for him. He failed to come, and after a wait

of several hours it returned home. Disappointed there it again came to me, and this time its master was there. The little creature was overjoyed and clung to him as a child would to its mother.

When at Malwa in Northern India, which is one of the lakes where I spent a day, I was warned that, in passing under a landslip which slopes down to the lake, I should be liable to have stones thrown at me by monkeys. Regarding this as being possibly a traveler's tale, I made a particular point



MONKEYS STONING MR. SEYMOUR.

of going to the spot in order to see what could have given rise to it. As I approached the base of the landslip on the north side of the lake, I saw a number of brown monkeys rush to the sides and across the top of the slip, and presently pieces of loosened stone and shale came tumbling down near where I stood. I fully satisfied myself that this was not merely accidental; for I distinctly saw one monkey industriously, with both forepaws, and with obvious malice, pushing the loose shingle off a shoulder of rock, I



LANGUR MONKEYS OF THE HIMALAYA MOUNTAINS.

then tried the effect of throwing stones at them, and this made them quite angry, and the number of fragments which they then set rolling was speedily doubled. This, though it does not actually amount to throwing or projecting an object by monkeys as a means of offense, comes very near to the

same thing, and makes me think that there may be truth in the stories of their throwing fruit at people from trees.

In confinement the monkey is generally docile, good-tempered and amenable to instruction. A specimen in a zoological garden was said to be a most importunate beggar; but instead of snatching the contributions of his visitors with violence or anger, like the generality of monkeys, he solicited them by tumbling, dancing, and a hundred other amusing tricks. He was very fond of being caressed, and would examine the hands of his friends with great gentleness and gravity, trying to pick out the little hairs, and all the while expressing his satisfaction by smacking his lips, and uttering a low surprised grunt.

Monkeys as a rule travel in bands in the wild state. The herds vary in number; some cannot include much less than from two hundred and fifty to three hundred monkeys of all ages. The old males usually take the lead when the troop is moving; some of them also bringing up the rear; others placing themselves on high rocks or bushes, and keeping a sharp lookout after enemies. A troop collected on a rocky crag presents a most singular appearance. Whenever they assemble in the evening every jutting rock, every little stone more prominent than the rest is occupied by a patriarch of the herd, who sits with gravity and watchfulness befitting his grizzled hair, waiting patiently for the march to begin anew. The females are mainly occupied in taking care of the young; the smaller monkeys amusing themselves by gamboling about. Occasionally, if a young monkey becomes too noisy, or interferes with the repose of his seniors, he "catches it" in most unmistakable style, and is dismissed with many cuffs, a wiser if not a better monkey.

Sometimes battles take place among the monkeys in the wild state, when it is surprising to witness the rapidity with which they will follow an offender down a stupendous precipice, or from the top of a lofty tree; tumbling one after another they descend hundreds of feet in a moment or two. The object of the popular wrath sometimes escapes, but in this event he is never permitted to return, becoming an exile. He often attaches himself to another group or band, where after a short probation he is received on good behavior. Should, however, the hapless member of the tribe be caught he is punished with death. The various troops rarely indulge in pitched battles with other bands, preferring to turn back in their course when their paths cross.

The member of the simian tribe with his natty red coat and twinkling



MACAQUE, OR BROWN MONKEY.

eye who is one-half the stock in trade of the organ grinder has been trained to do his part and does it faithfully. He is loyal to his master. An instance of this was shown when a highly prized monkey one day playfully climbed to the roof of his master's house. All efforts to induce him to come down were unavailing. Finally his master pointed a gun at him, but quite unsuc-

cessfully. Jack slipped over to the rear of the building. Another gun was procured and one was placed on each side of the house, when the monkey, seeing the fix he was in, sprang on the chimney, and hid in one of the flues, holding on by his forepaws. A fire soon brought him out and he meekly surrendered, coming to his master in an abashed and crestfallen manner.

With the exception of a few small species, such as the marmosets and the lemurs, the simians are not very pleasing animals in aspect or habits; while the larger apes and baboons are positively disgusting. The air of grotesque



A ROUGH RIDER IN AFRICA.

humanity that characterizes them is horribly suggestive of human idiocy. It is true that the naturalist learns to see wonder or beauty in all things of nature, and therefore looks with lively interest on the ape. But still, this creature is less pleasing in his sight than many others which may be not so highly developed; and in truth there are few who, if the choice lay between the two fates, would not prefer to suffer from the fangs and claws of the lion than from the teeth and hands of the ape,

Although these animals are capable of assuming a partially erect position, yet their habitual attitude is on all-fours. Even the most accomplished ape is but a bad walker when he discards the use of his two upper limbs, and trusts for support and progression to the hinder legs only. There are many dogs which can walk, after the manner of two-legged animals, with a firmer step and a more assured demeanor than the apes, although they do not so closely resemble the human figure.

On account of the structure of the limbs, the term "hand" is given to their extremities; but scarcely with perfect fitness. It must be borne in



A WHITE-NOSED MONKEY OF LIBERIA.

mind that the thumb is not always found on the fore extremities of these animals. In several kinds of monkeys the fore paws are destitute of effective thumbs, and the hand-like grasp is limited to the hinder feet. The so-called hands of the monkey tribes will not bear comparison with those of man. Although the thumb possesses great freedom of motion, and in many species can be opposed to the fingers in a manner resembling the hand of man, yet there is no intellectual power in the monkey hand; none of that characteristic contour which speaks of the glorious human soul so strongly that an

artist can sketch a single hand, and in that one member exhibit the individuality of its owner.

That monkeys, among the other characteristics which show a closer connecting link with the human species than is at all agreeable, should possess that love of seeing how near they can get to danger without being hurt, which finds a place in almost every man's breast, is especially odd, but none the less true.



HAVING FUN WITH A CROCODILE.

The rivers all through the kingdom of Siam abound with crocodiles in an extraordinary manner. These are tantalized daily by the monkeys, who annoy them in various ways. One day I was a witness to the monkey's love for frolic and the penalty sometimes paid. A large number of the agile little animals had gathered in a tree under which a crocodile was sunning in some shallow water. One after another the monkeys would drop to the lower branches, but careful not to approach too near the open jaws. Approaching

nearer and nearer the crocodile, and yelling at every effort the animal made to catch a stray leg or arm between his teeth.

The odd sport went on for a full hour, the monkeys growing more and more excited, and the crocodile never once losing his patience, probably well aware, from experience, that in the end he should be repaid for having so kindly lent himself to their amusement.



AN OLD HANUMAN APE.

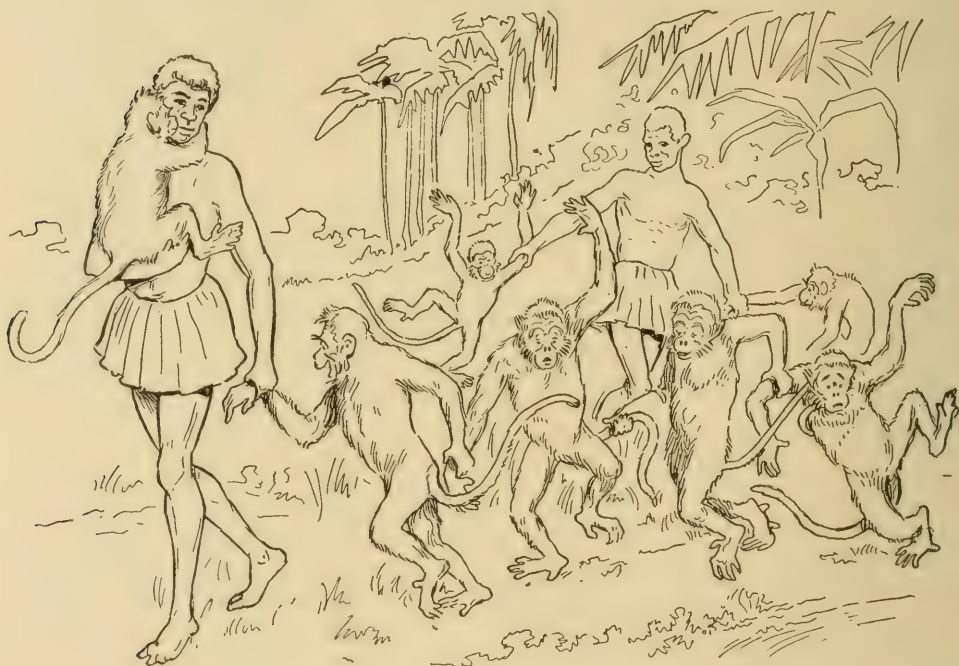
At last an unlucky monkey slid down the trunk of the tree, passing unceremoniously over the heads and backs of his companions, evidently with the intention of taking the place of the one who occupied the post of danger near the water.

The whole crowd yelled and chattered louder than ever, and the crocodile's mouth opened wider, but he gave no other evidence of eagerness.

The monkey had nearly reached the bottom of the line when he made a misstep, lost his hold, and fell into the river.

There was one cry of agony, that was fairly human in its intensity, and the unhappy wight was dragged under the water. The crocodile and his victim had disappeared.

The chain was immediately broken, the monkeys flew up the tree in ter-



A GOOD TEMPERANCE LESSON.

rible haste, their merriment changed to doleful cries, and there they sat wringing their hands and bewailing the fate of their companion.

In Darfour and Sennaar the natives make a fermented beer of which the monkeys are very fond. Aware of this, the natives go to the parts of the forests frequented by the monkeys, and set on the ground calabashes full of the enticing liquor. As soon as a monkey sees and tastes it, he utters loud cries of joy, attracting his comrades. Then an orgie begins, and in a short time the beasts show all degrees of intoxication. Then the negroes appear.

The few monkeys who come too late to get fuddled escape. The drinkers are too far gone to distrust their captors, but apparently take them for larger species of their own genus. The negroes lay hold of one or two, and these immediately begin to weep and cover them with maudlin kisses. When a negro takes one by the hand to lead him off, the nearest monkey will cling to the one who thus finds a support and endeavor to go off also. Another will grasp at him, and thus in turn till the negro leads a staggering line of ten or a dozen tipsy monkeys.



A DOG-FACED BABOON.

THE UGLY BABOON.

With the true baboons we come to the most hideous and repulsive-looking members of the monkey tribe, their repulsive appearance being only equalled by the fierce and untamable disposition of several of the group. All the baboons are confined to Africa and the countries lying on the north of the Red Sea, so that they are totally absent from the Oriental region.

They are found over the whole of Africa; but, as is so generally the case, are represented by a greater variety on the west coast than elsewhere, and it is also in that region that the most hideous representatives of the group are to be found.

While agreeing with the gelada baboon in the great length of their snouts, the true baboons are readily distinguished by the nostrils being placed at the very extremity of their snout; indeed, in the Arabian baboon they actually project slightly beyond the upper lip, as is the case in most dogs. This canine form of countenance led the ancient Greeks and Romans to apply the name dog-headed to these animals. This great prolongation of the snout shows that the baboons are the lowest of the Old World monkeys, and they bear the most marked signs of relationship with the inferior orders of mammals.

In addition to their long snouts, baboons are likewise distinguished by the large proportionate size of their skulls, this being most markedly the case with some of the West African forms. Moreover, the bones forming the upper jaws are greatly inflated, so as to give a swollen look to this part of the face in some of the species. They may also carry prominent oblique ridges, which form the support for the peculiar fleshy tumor-like structures occurring in certain West African examples.

In all the baboons the callous places on the buttocks are unusually large, and may be very brightly colored. The tail is never very long, and often very short. The arms and legs, or, as they may be better termed, fore- and hind-legs, are nearly equal in length, and are thus far better adapted for progress on the ground than for climbing. Indeed none of the baboons appear to be adepts at climbing, and many of them pass almost their whole time on the ground. Several species of this group show an especial predilection for rocky ground, and are accustomed to go in large troops—this association being probably necessary for defence against the attacks of leopards and other flesh eating animals.

Their defence does not, however, rest solely on the strength of numbers; for the male baboons, which are considerably superior in size and strength to their consorts, are armed with tusks of the most formidable dimensions. Indeed, a bite from one of these animals must be almost, if not quite, as severe and dangerous as a leopard's; and there are instances on record where leopards have been successfully attacked and mastered by a few old male baboons.

The mandrill, which is the most conspicuous of the baboon tribe, is a

native of Guinea and Western Africa, and is chiefly remarkable for the vivid colors with which it is adorned. Its cheeks are of a brilliant blue, its muzzle of a bright scarlet, and a stripe of crimson runs along the center of its nose. These colors are agreeably contrasted by the purple hues of the hinder quarters. It lives principally in forests filled with brushwood, from which



A WHITE-HANDED GIBBON.

it makes incursions into the nearest villages, plundering them with impunity. On this account it is much dreaded by the natives, who feel themselves incapable of resisting its attacks. It is excessively ferocious, and easily excited to anger; and when enraged, so boundless is its rage, that I have seen several of these animals expire from the violence of their fury.

The greenish-brown color of the hair of this and other monkeys is caused by alternate bands of yellow and black, which exist on each hair. The brilliant colors referred to above belong to the skin, and fade away entirely after death.

The chacma, or bear baboon is remarkable chiefly for its ability in discovering water. When the water begins to run short, and the known fountains have failed, the chacma is deprived of water for a whole day, until it is furious with thirst. A long rope is then tied to the baboon's collar, and it is suffered to run about where it chooses.

First it runs forward a little, then stops; gets on its hind feet, and sniffs up the air especially taking notice of the wind and its direction. It will then, perhaps, change its course; and after running for some distance, take another observation. Presently it will spy out a blade of grass, or smaller object, pluck it up, turn it on all sides, smell it, and then go forward again. Thus the animal proceeds until it leads the party to water—guided by some mysterious instinct.

This species is an inhabitant of the countries bordering on the Red Sea littoral and the Upper Nile valley, but to reach its habitat we have to travel to the southern extremity of the African continent.

Like all the remaining representatives of the long-tailed baboons, the chacma differs from the Arabian baboon by the absence of the mane on the neck and shoulders of the males. We have, indeed, in this respect a gradual descending series from the gelada baboon, in which both sexes are maned, through the Arabian baboon, in which only the males are so ornamented, to the chacma, in which both males and females are maneless. In size the chacma is one of the largest of the group, and it has been compared in this respect, as well as in its bodily strength, with an English mastiff.

The doguera baboon is a closely allied species or variety, found in Abyssinia. It is of a more olive color than the sacred baboon. Dr. Anderson describes a male preserved in the museum at Calcutta as being of a uniform yellowish-olive color on the whiskers and all over the body, above and below, except on the hands and feet, which are nearly black. The coarse hair on the fore-part of the body is about six inches in length, and is ashy-grey in color for the first two inches, while the remainder is banded with nine rings of orange and black.

It was long thought that the yellow baboon, which takes its name from the pale brownish-yellow hue of the fur, came from Nubia and the Sudan; it is now known to occur on the west coast; but there is a baboon found in



THE MALBROOK, OR ORGAN GRINDER'S MONKEY.

the neighborhood of Kilima-Njaro, on the east coast, which is identified with this species. These baboons generally frequent the outlying parts of the plantations of the natives, subsisting largely on the maize and other products stolen therefrom. In certain localities they are extremely numerous, going about in troops composed of about fourteen individuals of both sexes and of all ages. They have but little fear of man, and instead of running away will turn round and face an intruder, with threatening gestures, at a distance of only a few yards. The natives are in the habit of driving them away from the crops, when the baboons retreat in a leisurely manner, with their cheek-pouches crammed full, and often dragging off some of the plunder in their hands.

There are few species of mammals that have given rise to more confusion in natural history literature than the Guinea baboon, of which examples have been described under at least two distinct names, and regarded as different species, though it is a well-ascertained fact that the common baboon belongs to one and the same species as the Guinea baboon.

The Guinea baboon is characterized by the uniformly reddish-brown color of its fur, which is washed with a yellowish tinge, more especially upon the head, shoulders, back, and limbs; the cheeks and throat being paler, and the whiskers fawn-colored. As in the chacma, the upper eyelids are white. The nose projects rather beyond the upper lip, but is somewhat less elongated than in the chacma, and has small swellings corresponding with those so enormously developed in the next species.

As its name indicates, it is an inhabitant of Guinea; and although, judging from the number of specimens that are imported into Europe, it must be common, there is no record of its habits and mode of life in a state of nature. Of those in a state of confinement there are, however, numerous accounts, the species being frequently carried about by itinerant showmen.

THE INTELLIGENT CHIMPANZEE.

The chimpanzee is a native of Western Africa, and is common on the banks of the Gambia and in Congo. It is also found on the peninsula of Malacca and several islands of the Indian ocean. Large bands of these formidable apes congregate together and unite in repelling an invader, which they do with such fury and courage that even the dreaded elephant and lion are driven from their haunts by their united efforts. They live principally on the ground, and, as the name imports, spend much of their

time in caves and under rocks. Their height is from four to five feet, but they are said not to reach this growth until nine or ten years of age.

That the chimpanzee was known in Europe as far back as 1598 is proved by an account brought back from the Congo by a Portuguese sailor, named Eduardo Lopez. In 1613 there appeared the history of the wanderings of an English sailor, named Andrew Battel, in the lower part of Guinea, in 1590, who appears to have heard of or seen, not only the chimpanzee,



THE CHIMPANZEE AND ITS HABITS.

which he designates the Enjocko, but likewise the gorilla, which he calls the pongo. Hence the name Jocko so generally given to individuals of the monkey tribe.

In captivity, chimpanzees, when in health, are gentle, intelligent, and affectionate, readily learning to feed themselves with a spoon, or to drink out of a glass or cup. Unfortunately, however, their span of life in this

country is but brief. The longest period that a chimpanzee has hitherto lived in a zoological garden at London is eight years; "Sally," who died in 1891, having been kept there for that time. The description by Dr. J. G. Romanes of the mental power of "Sally" is full of interest. This account was written after the creature had been nearly six years in the London Zoological Gardens. The intelligence of "Sally" is compared by Dr. Romanes to that of a child a few months before emerging from the period of infancy, and is thus far higher than that of any other mammal (exclusive of man). In spite, however, of this relatively high degree of intelligence, the creature's power of making vocal replies to her keepers, or those with whom she was brought into contact, were of the most limited kind. Such replies were, indeed, restricted to three peculiar grunting noises. One of these indicated assent or affirmation; another, of very similar intonation, denoted refusal or distrust; while the third, and totally different intonation, was used to express thanks or recognition of favors. In disposition "Sally" was, like many of her sex, apt to be capricious and uncertain; although, on the whole, she was good-humored and fond of her keepers, with whom she was never tired of a kind of bantering play.

It has always been a matter of surprise that no large man-like ape now inhabits the dense tropical forests of India or Burma, which would appear to be just as suitable for these creatures as are those of Borneo or Equatorial Africa. The discovery in India of a jaw of a large ape apparently belonging to the same genus as the chimpanzee shows us, however, that large man-like apes must have once roamed over the plains of India. Why chimpanzees, together with hippopotami and giraffes, which are likewise found fossil in India but are now confined to Africa, should have totally disappeared from the former country, is, however, one of those puzzling problems connected with the distribution of animals which we have but little hope of answering satisfactorily.

THE ORANG-OUTAN.

The Orang-outan inhabits Borneo and Sumatra. In Borneo there are two species of orang, called by the natives the Miaskassar and the Miaspappan. Some naturalists suppose that the Sumatran orang is also a distinct species.

This is the largest of all the apes, as it is said that orangs have been obtained from Borneo considerably above five feet in height. The strength of this animal is tremendous: a female snapped a strong spear asunder after

having received many severe wounds. Its arms are of extraordinary length, the hands reaching the ground when it stands erect. This length of arm is admirably adapted for climbing trees, on which it principally resides.

When young the orang-outan is very docile, and has been taught to make its own bed, and to handle a cup and saucer, or a spoon, with tolerable propriety. For the former occupation it proved itself particularly apt, as it not only laid its own bed-clothes smooth and comfortable, but exhibited much ingenuity in stealing blankets from other beds, which it added to its own. A young orang evinced extreme horror at the sight of a small tor-



YOUNG OURANG-OUTANS AT PLAY.

toise, and, when the reptile was introduced into its den, stood aghast in a most ludicrously terrified attitude, with its eyes intently fixed on the frightful object.

The orangs, like gorillas, go in small family parties, consisting of the parents accompanied frequently by from two to four young ones. Although they will devour leaves, buds, and young shoots,—more especially those of the bamboo,—the chief food of the orang consists of fruits of various kinds, the prime favorite being the luscious but ill-smelling durian or jack-fruit.

Of this fruit they waste a vast quantity, throwing the rejected rinds on the ground below.

THE ACROBATIC MONKEY.

The Agile Gibbon is a native of Sumatra. This species, too, is included in the man-like apes. It derives its name of Agile, from the wonderful activity it displays in launching itself through the air from branch to branch. One of these creatures, that was exhibited some time since, sprang with the greatest ease through distances of twelve and eighteen feet; and when apples or nuts were thrown to her while in the air, she would catch them without discontinuing her course. She kept up a succession of springs, hardly touching the branches in her progress, continually uttering a musical but almost deafening cry. She was very tame and gentle, and would permit herself to be touched or caressed. The height of the gibbon is about three feet, and the reach of the extended arms about six feet. The young gibbon is of a paler color than its parent.

THE LONG-NOSE MONKEY.

The kahau, or proboscis monkey, is a native of Borneo. It derives its name from the cry it utters, which is a repetition of the word "kahau." It is remarkable for the extraordinary size and shape of its nose, and the natives relate that while leaping it holds that organ with its paws, apparently to guard it against the branches. It is not an animal of very captivating appearance; but when it has been macerated in spirits of wine for a few months, its ugliness is quite supernatural. Naturalists formerly supposed that there were two species of this animal—the nose of one being aquiline and that of the other being slightly turned up. It was discovered, however, that the latter animal was only the young kahau, whose little nose had not reached its full beauty. The length of the animal from the head to the tip of the tail is about four feet four inches; and its general color is a sandy red, relieved by yellow cheeks and a yellow stripe over the shoulders.

THE SACRED MONKEYS OF INDIA.

The monkey called the Entellus is held sacred in some parts of India, particularly in Lower Bengal. The origin of the extreme veneration, which multitudes cherish for this animal, is involved in the obscurity of their early



SACRED APES OF INDIA.

history, and may be traced back to the most remote periods. Some years ago, a rajah spent 100,000 rupees in marrying two monkeys, with all the parade of a Hindoo wedding. The festivities on such an occasion always take place at night.

On the so-called marriage of the monkeys, there were seen in the pro-

cession, elephants, camels, horses, richly caparisoned, palanquins, flambeaux, and lamps. The male monkey was fastened in a gaily-decked palanquin, having a crown on his head, with men standing by his side to fan him, as they would a human being. Then followed singing and dancing girls in carriages, and for twelve days the festivities were carried on at the monkey palace.

THE MARMOSET.



MARMOSET TEARING PICTURES OF BUGS OUT OF A BOOK AND EATING THEM.

The marmoset is a most interesting little creature. It is exceedingly sensitive to cold, and when out of its own country is usually occupied in nestling among the materials for its bed, which it heaps up in one corner and out of which it seldom entirely emerges. It will eat almost any article of food, but is especially fond of insects, which it dispatches in a very adroit manner. It will also eat fruits, especially those of its native country. Its fondness for insects has been carried so far that it has been known to pinch out the figures of beetles in books and swallow them,



STORY OF THE ANTELOPE.

No animal in a wild state appeals more strongly to my sympathy than the antelope. I have spent hours watching these timid, harmless, large-eyed creatures, of which there are about seventy different species. The love of the mother doe for her fawn is so tender and gentle as to be almost human, and the absolute faith of the little creature in its mother is ideal.

Although they are so timid and flee at the first approach of danger, there are times when certain species of antelope exhibit a high order of courage. I was once an eye witness to an act of bravery on the part of an antelope, a South African gemsbok, that was equal to that of any animal I know. We were stalking a lion in Cape Colony, when we saw the big beast suddenly crouch in a thicket of wait-a-bit thorns, his gaze intently fixed upon some object at right angles to where we were lying. Looking in the same direction we saw a pair of gemsboks walking unsuspectingly toward the ambush. Just in front of the lion was a huge ant-hill, and toward it came the gemsboks, occasionally twitching their black tails; but that was to rid their flanks of flies and not from any fear of danger.

As the antelopes drew near the ant-hill, the lion drew back his head until it was nearly concealed under his black, shaggy mane. They could not have possibly seen him where he lay, nor he them, and he now appeared to trust to his ears to inform him of their approach.

He waited till both were opposite, and broadside toward him, at the distance of less than twenty paces from the hill. Then his tail was seen to vibrate with one or two quick jerks, his head shot suddenly forth, his body

spread out apparently to twice its natural size, and the next moment he rose like a bird into the air.

With one bound he cleared the wide space that separated him from the nearest of the gemsboks, alighting on the hindquarters of the terrified animal. A single blow of his powerful paw brought the antelope to his haunches; and another, delivered almost at the same instant, stretched its body lifeless on the plain.

Without looking after the other, or seeming to care further about it, the lion sprang upon the body of his victim, and clutching its throat between its jaws, commenced drinking its warm blood.



THE GEMSBOK SLAYING THE LION.

It was the bull gemsbok which the lion pulled down, as this was the one that happened to be nearest the hill.

As the lion sprang upon her companion, the cow, of course, started with affright, and we supposed we would see her the next moment scouring off over the plain. To our astonishment she did no such thing. Such is not the nature of the noble oryx. On the contrary, as soon as she recovered from the first moments of alarm, she wheeled around toward the enemy—and, lowering her head to the very ground, so that her long horns projected horizontally in front, she rushed with all her strength upon the lion.

The latter, in full enjoyment of his red draught, saw nothing of this manœuvre. The first intimation he had of it was to feel a pair of spears pierced through his ribs, and it is not likely he felt much more.

For some moments a confused struggle was observed, in which both lion and oryx seemed to take part; but the attitudes of both appeared so odd,



A SOUTH AFRICAN GEMSBOK.

and changed so rapidly, that we could not tell in what manner they were combating. In a few moments the roar of the lion ceased, and we knew that he was dead.

We had crawled closer to witness the result of the battle, and were now within easy range for a shot. One of my Kaffir boys raised his rifle and

aimed at the gemsbok, but before he could pull a trigger, I held up my hand in warning.

"Don't shoot!" I exclaimed at the same time. "That gemsbok is entitled to her life, and as far as I am concerned she shall have it."

We needed venison, too, but I am sure I would not have enjoyed eating that noble heroine.

Antelopes are characterized by their graceful build, and by the head being carried considerably above the level of the back. The horns, which may or may not be present in the females, are generally long, more or less round. They are frequently marked with prominent rings, and have an upright direction. Their bony cores, instead of being honeycombed, as in the oxen, sheep, and goats, are nearly solid throughout. These animals very generally have a gland beneath the eye, by which they are distinguished from the oxen and goats; but, as regards their teeth, some of them resemble the oxen, while others are more like those of the sheep and goats.

THE GEMSBOK.

Under the title of oryx are five species of antelope, found throughout the desert regions of Africa, and also in Arabia and Syria. In South Africa the best representative of the oryx family is the gemsbok, which stands about four feet in height, is greyish in color, becoming white beneath. A black stripe on the flanks divides the grey of the sides from the white below, and there is also a black surface on the haunches extending as a line on the back, and continued over the whole of the tail. In addition to this, there is also black on the upper parts of the limbs, on the front of the legs above the fetlocks, and along the throat; the throat-stripe dividing and running up the sides of the head nearly to the ears. On the face a black stripe runs from each horn through the eye nearly to the muzzle, which is connected by a narrow stripe with a broad black patch on the center of the forehead. The longest male horns of this species I ever saw measured were 42 inches in length, while those of the female may reach 46½ inches. Horns have been recorded measuring 47½ inches.

Gemsboks are generally met with where the country is either completely open or covered with stunted scrub. They thrive and attain high condition in barren regions where it might be imagined a locust would not find subsistence; and, burning as is the climate, they are perfectly independent of water, which, from my own observation and the repeated reports both of

the Boers and aborigines, I am convinced they never by any chance taste. The flesh ranks next to the eland. The gemsbok is by no means fleet, and it can be run to a standstill by a hunter on foot.

In Abyssinia and Somaliland as well as on the Red Sea littoral near Suakin, the gemsbok is replaced by the beisa, readily distinguished by the



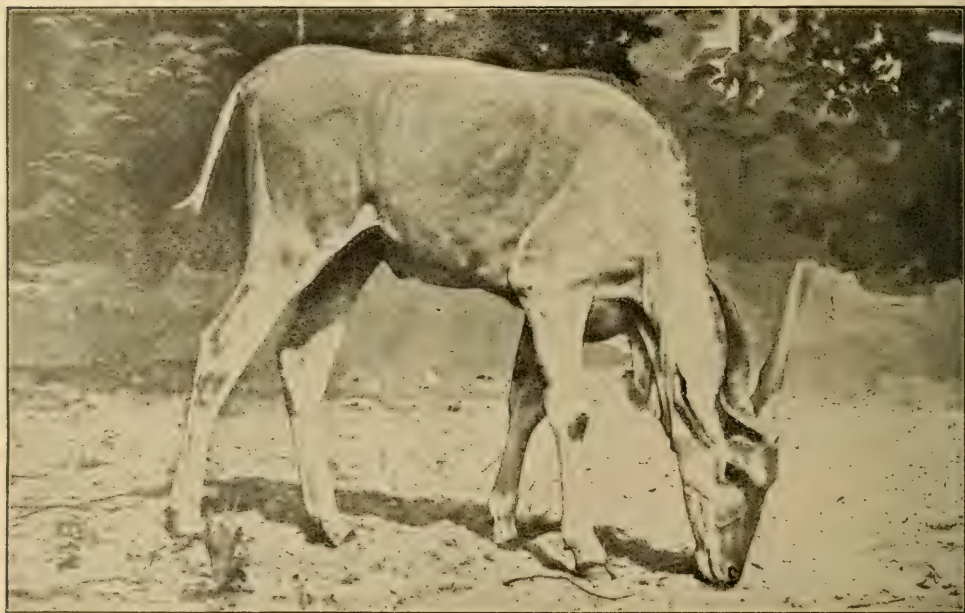
FEMALE SABRE-HORNED ANTELOPE AND FAWN.

absence of the tuft of hair on the throat, and by the black patch on the front of the face being completely separated from the stripe running through the eye. The horns are shorter than those of the gemsbok. The sabre-horned antelope differs from the others of the oryx family in its recurved scimitar-like horns, and whitish color which sometimes shows a reddish tinge.

THE ELAND.

The African eland is the largest of the antelope tribe. They vary in color from a tawny yellow to a slaty blue, while in the extreme northern part of their range they are sometimes marked with white stripes. An average-size bull eland stands five feet nine inches at the withers and will weigh from 1,100 to 1,500 pounds.

Eland are found both in the desert-country, and in wooded districts, both hilly and flat. In Nyasaland, their favorite haunts are undulating, well-



A BUCK ELAND.

timbered country, where the grass is not too long, and where there are intervening open plains; as a rule, they visit the plains at night or in the early mornings to drink, and then wander back long distances to the forest, where they spend the hot hours of the day. In the great Kalahari Desert, where they are still common, the eland go a long period without drinking any water, except that which they may obtain by eating watermelons and other plants. Eland are generally found in large herds, numbering from fifty to upwards of a hundred head, but solitary bulls or small parties of bulls are not unfrequently observed.

Elands are generally accompanied by "rhinoceros birds," which, in addition to their natural timidity, make them difficult to approach on foot. Consequently they are generally hunted on horseback. The bulls, when fat, can be easily ridden down by a good horse; but the cows have greater speed and staying power. When pursued, eland frequently leap high in the air. When they have their calves with them, the cows will attack and impale dogs on their horns; but at other seasons both sexes are quite harmless. Mr. Selous states that the flesh of the eland has been very generally over-esti-



A NILGAI ANTELOPE.

mated; and during the dry season, when these animals often subsist entirely upon leaves, it is quite uneatable.

THE NILGAI.

There is not much sport in hunting nilgai, the largest of the Indian antelope. In closely settled districts they are as tame as domestic cattle, and in the unsettled districts where they are shy, they are easily ridden down

by a good horse. They are a poor trophy after they are shot, as the meat lacks flavor.

The nilgai is exclusively a native of India, being entirely unknown even in Ceylon. The animal is peculiar in having the fore limbs longer than the hinder.

Nilgai are found either on the plains or in low hills, generally preferring ground covered with thin bush, among which are scattered low trees, or alternations of scrub-jungle with open grassy plains. They are but seldom met with in thick forest, although far from unfrequent on cultivated grounds.



SOUTH AFRICAN NATIVE HUNTING GNU.

Only the males have horns, which are short, smooth and nearly straight, directed upward and backward. Nilgai both graze and browse, and in the cold season they drink but once in two or three days.

THE GNU, OR WILDEBEEST.

Next to a monkey, I believe the gnu or South African wildebeest, as the Dutch hunters call them, is the most inquisitive of all animals.

In "trecking" across the Transvaal I would frequently come upon herds of twenty to fifty. As soon as they caught sight of us they would begin

curveting around the wagons, wheeling about in endless circles and cutting all sorts of curious capers.

While I was riding hard to obtain a shot at a herd in front of me, other herds charged down wind on my right and left, and, having described a number of circular movements, they took up position upon the very ground across which I had ridden only a few minutes before. Singly, and in small troops of four or five individuals, the old bull wildebeests may be seen stationed at intervals throughout the plains, standing motionless during a



THE BLUE OR BRINDLED GNU.

whole forenoon, coolly watching with a philosophic eye the movements of the other game, uttering a loud snorting noise, and also a short sharp cry which is peculiar to them. When the hunter approaches these old bulls, they commence whisking their long white tails in a most eccentric manner; then, springing into the air, begin prancing and capering, and pursue each other in circles at their utmost speed. Suddenly they all pull up together to overhaul the intruder, when the bulls will often commence fighting in the most violent manner, dropping on their knees at every shock; then,

quickly wheeling about, they kick up their heels, whirl their tails with a fantastic flourish, and scour across the plain enveloped in a cloud of dust. In addition to their speed, wildebeest are remarkable for their extreme tenacity of life; and, owing to the vigorous use they make of their horns, are awkward creatures to hunt with dogs. Europeans find them good practice in rifle-shooting, as they will stand in herds at a distance which they think secure, say three hundred or four hundred yards, and watch the passer-by. Only occasionally can they be approached within easy range by fair stalking; although they may be killed by watching at their drinking-holes at night. During a thunderstorm of unusual intensity, I walked, hardly knowing where I was going, right into a herd of gnu. I did not see them until I was almost among them; but even had my gun not been hopelessly soaked, the fearful storm made self-preservation, and not destruction, one's chief thought. They were standing huddled in a mass, their heads together, and their sterns outwards, and they positively only just moved out of my way, much the same as a herd of cattle might have done.

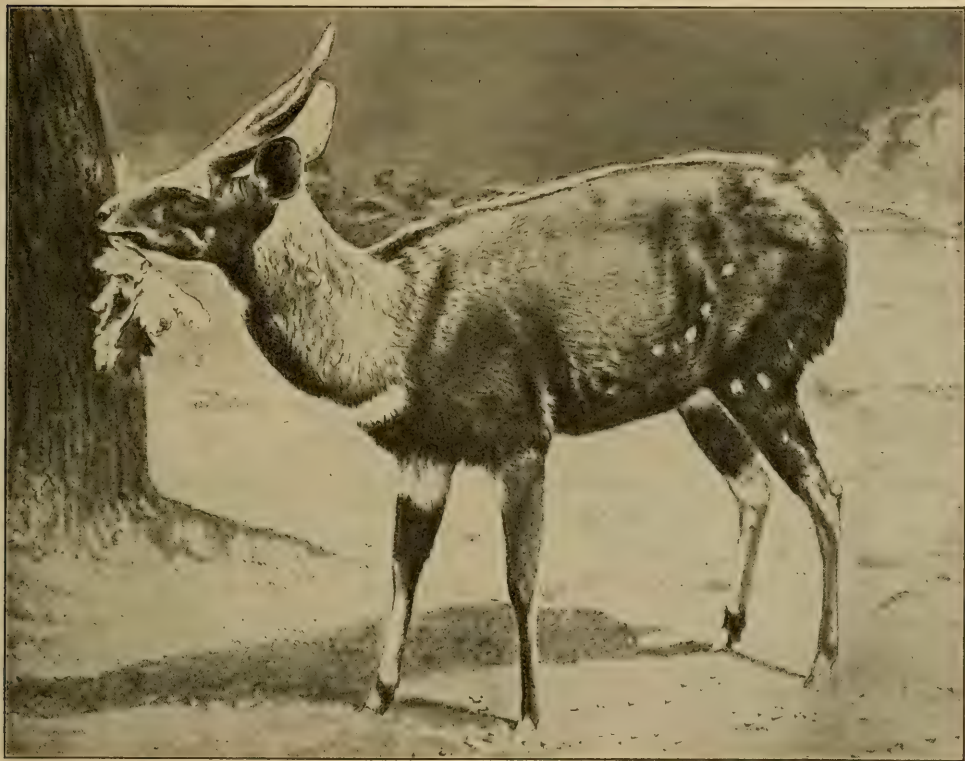
The faculty of curiosity is largely developed in the gnu, which can never resist the temptation of inspecting any strange object, although at the risk of its life. When a gnu first catches sight of any unknown being, he sets off at full speed, as if desirous of getting to the furthest possible distance from the terrifying object. Soon, however, the feeling of curiosity vanquishes the passion of fear, and the animal halts to reconnoitre. He then gallops in a circle round the cause of his dread.

The native hunters are enabled to attract a herd of gnus, feeding out of shot, merely by getting up a clumsy imitation of an ostrich, by holding a head of that bird on a pole, and making at their back a peacock's tail of feathers. The inquisitive animals are so fascinated with the fluttering lure, that they actually approach so near as to be easily pierced with an arrow or an assegai.

The gnu, or wildebeest, inhabits Southern Africa. At first sight it is difficult to say whether the horse, buffalo, or deer predominates in its form. It, however, belongs to neither of these animals, but is one of the bovine antelopes. The horns cover the top of the forehead, and then, sweeping downwards over the face, turn boldly upwards with a sharp curve. The neck is furnished with a mane like that of the horse, and the legs are formed like those of a stag. There are two species of wildebeest in South and East Africa. The common, or white-tail wildebeest, is strictly South African, while the blue or brindled wildebeest never goes south of the Orange River.

PALA OR ROY-BOCK.

The pala or roy-bock is an inhabitant of Southern Africa, where it is seen in large herds. It is a remarkably fine animal, measuring three feet in height at the shoulder, and being gifted with elegantly shaped horns and a beautifully tinted coat. The general color of the pala is bay, fading into white on the abdomen, the lower part of the tail, and the peculiar disc of lighter-col-



SOUTH AFRICAN BOSCH BOCK.

ored hairs which surround the root of the tail in so many antelopes. Its specific name, *Melampus*, is of Greek origin, signifying black-footed, in allusion to the jetty hue of the back of its feet.

The horns of this animal are of considerable length, often attaining to twenty inches, and are rather irregular in their growth. They are very distinctly marked with rings.

The food of the pala consists chiefly of tender herbage and the young twigs of the underwood among which it generally takes up its abode. It is hardly so timid as other animals of the same family, and will often allow strange creatures to approach the herd without much difficulty. It has a curious habit of walking away when alarmed, in the quietest and most silent manner imaginable, lifting up its feet high from the ground, lest it should haply strike its foot against a dry twig and give an alarm to its hidden foe. Palas have also a custom of walking in single file, each following the steps of its leader with blind confidence; and, when they have settled the direction in which they intend to march, they adhere to their plan, and will not be turned aside even by the presence of human beings. It is generally found in or near the district where low wood prevails.

THE PRONG-BUCK OR AMERICAN ANTELOPE.

Of all the antelope tribe none affords the hunter as good sport and as fine venison as the antelope found west of the Mississippi River, and known to scientists as the prong-buck or the prong-horned antelope. At one time it was common as far west as California and Oregon, but it is now found only in the Rocky mountain regions and on the plains between those mountains and the northern section of the Mississippi. It is a graceful, light-built animal, standing about two feet ten inches at the shoulder.

The coloration of the prong-buck is decidedly handsome and striking; the general hair of the upper-parts and outer surfaces of the limbs being chestnut. The hair on the back of the neck, which is of the general chestnut tint, is lengthened into a kind of mane. The face is brownish black; but the summit of the head above the eyes, and likewise the ears, cheeks, and chin are white. White also prevails on the lower portion of the throat, the under-parts, and half of the flanks, and extends upwards to form a large patch on the rump which includes the tail. Usually the throat is crossed by three russet-yellow bars. The lower portion of the limbs is white. The horns are black, save at the tips, where they become yellowish; and their usual length is about 12 inches. They are shed once a year.

The prong-buck or American antelope is shy and timid and can outrun the swiftest deer.

In spite of their extreme speed, prong-buck are but poor jumpers, and appear unable to leap over any large object that may be in their path. Their inability to leap over high objects may no doubt be attributed to the fact that they live upon the plains, where they rarely meet with such obstruc-

tions, and so they and their ancestors for untold generations have had no occasion to overleap high obstructions, and thus from disuse they do not know how to do it.

If a prong-buck on the plains desires to cross the railroad track, when alarmed by the cars, as is sometimes the case, he will strain every muscle to outrun the train and cross ahead of it, as if he suspected a purpose to cut him off from crossing; and thus many an exciting race has been witnessed between muscle and steam. When excited during its gambols with its fellows, or by the emotions of rage or fear, the appearance of the prong-buck



PRONG-BUCK, OR AMERICAN ANTELOPE.

alters considerably. On such occasions the hair of the white patch on the rump rises up on each side of the backbone, and remains as erect and stiff as bristles.

There are many stories about the great distance that ostriches can see, but the ostrich is near-sighted when compared with the American antelope. I have never had any difficulty in getting within two hundred yards of an ostrich under favorable conditions, but during my early experience I never got closer than six hundred yards to an American antelope. Even at that distance the animal was wide awake and fully able to take care of itself.

The only antelope that excels the prong-buck in speed is the Indian black-buck. This fact is proved by coursing the animals with greyhounds. A swift and tough greyhound will overtake and pull down a prong-buck, but I have never known one to catch a black-buck in the open.

The hide of the prong-buck is practically worthless on account of the brittleness of the hairs.

INDIAN BLACK BUCK.



INDIAN BLACK BUCK.

The handsomely colored black buck, or Indian antelope, stands about 32 inches at the shoulder. The usual length of the horn varies from 16 to 20 inches. The upper parts of the animal are jet black and the lower parts white.

This antelope never enters forest nor high grass, and is but rarely seen amongst bushes. When not much pursued or fired at, it will often allow

men to come in the open within about one hundred and fifty yards, sometimes nearer. Carts and natives can approach still closer. The black buck feeds at all hours, although it generally rests during the middle of the day. In certain districts, where there is no fresh water except in deep wells, it is certain that these animals never drink; but several observers have proved that in other places they, at least occasionally, drink freely. Like the springbok, the black buck frequently leaps high in the air when running.



THE ADDAX, EGYPTIAN ANTELOPE.

The speed and endurance of these animals are well known; and it is but very seldom that they are pulled down on good ground by greyhounds. In heavy sand, or on soft ground during the rains, they are, however, easily overtaken by good dogs; and wounded bucks may be ridden down. The favorite method of hunting them, however, is with the chita, or hunting leopard.

Young fawns are generally concealed by the does in long grass. The

bucks utter a short grunt, and the does a kind of hissing sound when alarmed.

THE ADDAX ANTELOPE.

The addax, or spiral horned antelope, is a native of Northern Africa, ranging from the Nile to Lake Tchad and Senegal. It is a genuine desert antelope. Sometimes it is called the Mendes antelope, because in the Egyptian temple of Mendes are many images of Egyptian gods wearing head



FEMALE SWAMP ANTELOPE.

dresses of horns which were spiral shaped. The addax is of uniformly light color, with a brownish grey mane. It has a huge tuft of hair on the forehead which looks as if it had received the attention of a hair dresser. The ancient Egyptians kept the addax as a domestic animal.

THE SWAMP ANTELOPE.

The harnessed antelope of West Africa greatly resembles the *kuau* or pigmy antelope. The species shown in the accompanying illustration is

from the Camerun mountains and the Gabun district. This antelope has white spots on the head and stripes on the body, but differs from other horned antelopes in the extremely long hoofs, which are evidently specially adapted for walking on swampy ground. The lateral hoofs are large and elongated. The male stands about three and one-half feet at the shoulder; and is characterized by the absence of a fringe of long hair on the throat, and the



A YOUNG BLESSBOK.

dark olive tint of the coat. In the female the ground-color of the fur is bright rufous, ornamented, as in the male, with white spots on the face and stripes on the body. The horns of the male are generally about 18 or 19 inches in length, measured in a straight line. Little or nothing appears to be known as to the habits of this species in its wild state. Its common name is swamp antelope.

THE BLESSBOK.

The blessbok and the closely-allied bontebok, are smaller South African antelopes. In both species the horns are compressed, with the rings strongly marked. For a short distance they run almost parallel, and then curve backwards. Their usual length is about 15 inches. Both species are characterized by their brilliant purple-red color, and the broad white "blaze" down



A WATER BUCK.

the face, from which the blessbok takes its name. In height the blessbok stands about 3 feet 2 inches or rather more at the withers, but the bontebok may reach from 3 feet 2 inches to 3 feet 11 inches.

The blessboks resemble the smaller springbok in manners and habits. They differ from the latter in the determined and invariable way in which

they scour the plains, right in the wind's eye, and also in the manner in which they carry their noses close to the ground.

The water buck stands upwards of 4 feet or more at the withers, and has long and very coarse hair, which varies in color from reddish brown to dark gray, with an oval ring of white on the buttocks, a white gorget on the throat, a streak of the same color on part of each eye, and some white



FEMALE NILGAI.

near the muzzle. Good horns average about 28 inches along the curve. Water buck inhabit Southern and Eastern Africa to some distance north of the Zambesi; and they are never found in herds of more than twenty individuals. The water buck is most partial to steep, stony hills, and is often found at a distance of more than a mile from the nearest river, for which, however, it always makes when pursued.

The hartebeest of South Africa gets its name from its supposed likeness to a stag.

All these animals differ from wildebeests by their long and pointed heads, ending in a narrow muzzle; their ringed horns, the absence of a mane on the neck or throat, and their shorter and less thickly-haired tail.

The true hartebeest is a South African species, not ranging as far north as Matabeleland and Mashonaland. This fine animal stands about four feet at the withers; its general color being grayish brown, with a pale yellowish



THE HARTEBEEST.

patch on each side of the haunches, and black markings on the forehead and nose. The hair of the face is reversed as high up as the eyes, or even to the horns. The horns are long and boldly ringed, diverging from one another in the form of a V, with their tips directed backwards at a right angle, and the bases curved away behind the plane of the forehead. Their length varies in good specimens from 20 to 24 inches. It is one of the fastest antelopes in Africa, and possesses such strength as to render it almost impossible for anything under a whole pack of strong and swift hounds to bring it to bay.



STORY OF THE RHINOCEROS.

The rhinoceros is favorite game both in India and Africa. It has a ferocious disposition and is hard to kill. The easiest and least dangerous method is for the hunter to conceal himself and shoot it when it comes to drink at the pool. The true sportsman prefers to hunt it on horseback with dogs.

As the eyes of the rhinoceros are very small, it seldom turns its head and therefore sees nothing but what is before it. It is to this that it owes its death, and never escapes if there be so much plain as to enable the horses of the hunters to get before it. Its pride and fury then makes it lay aside all thoughts of escaping, except by victory over its enemy. For a moment it stands at bay; then at a start runs straight forward at the horse which is nearest. The rider easily avoids the attack by turning short to one side. This is the fatal instant; a naked man who is mounted behind the principal horseman, drops off the horse, and, unseen by the rhinoceros, gives it, with a sword, a stroke across the tendon of the heel, which renders it incapable either of flight or resistance.

Several travelers have mentioned that there are certain birds which constantly attend the rhinoceros, and give him warning of approaching danger. Their accounts were either received with silent contempt, or treated with

open ridicule, as preposterous extensions of the traveler's privilege of romancing. I can bear witness to the truth of these reports. Once while hunting the rhinoceros in Africa, I saw a huge female lying in the jungle asleep. My first thought was to photograph her and then attack her. I began to crawl toward her, but before I could reach the proper distance several rhinoceros-birds, by which she was attended, warned her of the impending danger, by sticking their bills into her ear, and uttering their harsh, grating cry. Thus aroused, she suddenly sprang to her feet, and crashed away through the jungle at a rapid trot, and I saw no more of her.

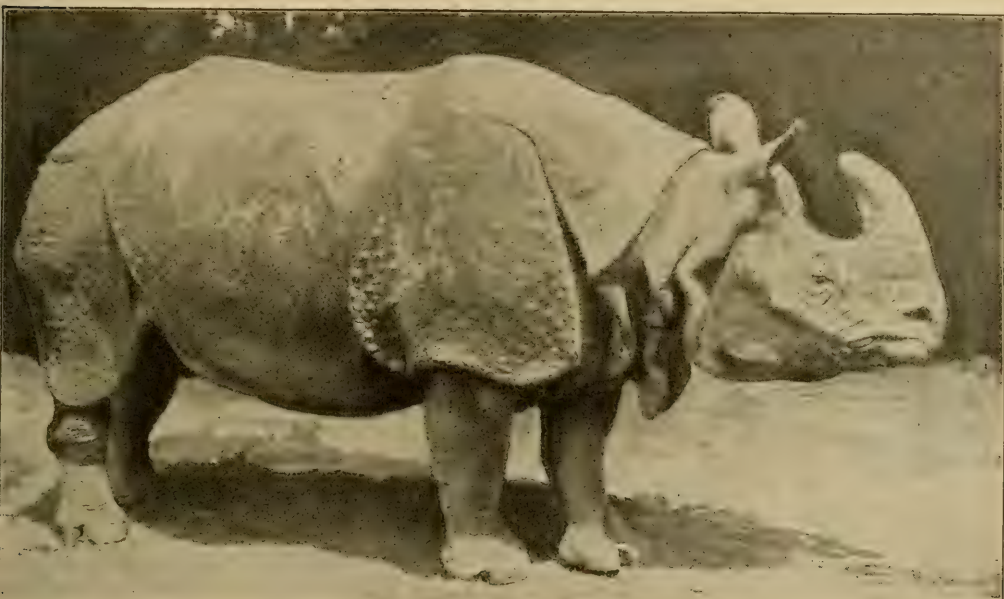
These rhinoceros-birds are constant attendants upon the hippopotamus and the four varieties of rhinoceros, their object being to feed upon the ticks and other parasitic insects that swarm upon these animals. They are of a grayish color, and are nearly as large as a common thrush; their voice is very similar to that of the mistletoe-thrush. Many a time have these ever-watchful birds disappointed me in my stalk, and tempted me to invoke an anathema upon their devoted heads. They are the best friends the rhinoceros has, and rarely fail to awaken him, even in his soundest nap. "Chukuroo" perfectly understands their warning, and springing to his feet, he generally first looks about him in every direction, after which he invariably makes of.

Next to the elephant in size, comes the rhinoceros, which with the hippopotamus, lays claim to bulk and ferocity unequalled by any other member of the animal kingdom. The rhinoceros is found in the rivers of Central Africa and Southern Asia. It can only live in tropical climates.

The length of the rhinoceros is usually about twelve feet, and this is also nearly the girth of its body. The skin, which is of a blackish color, is disposed, about the neck, into large plaits or folds. A fold of the same kind passes from the shoulders to the fore legs; another from the hind part of the back to the thighs. The skin is naked, rough, and covered with a kind of tubercles, or large callous granulations. Between the folds, and under the belly, it is soft, and of a light rose-color. The horns are composed of a closely-packed mass of horn fibers, growing from the skin, and having no connection with the bones of the skull, although there are prominences on the latter beneath each horn. Although the African species are entirely dependent on their enormous horns, as weapons of offense and defense, the Asiatic kinds, in which the horns are smaller, seem to rely chiefly upon their sharply-pointed lower tusks, which are capable of inflicting

terrific gashes. All are mainly abroad at night, and while some resemble the tapirs in frequenting tall grass-jungles and swampy districts, others seem to prefer more or less open plains. Their food is entirely vegetable; but whereas some species live almost exclusively on grass, the food of others consists mainly of twigs and small boughs of trees. At the present day these animals are restricted to South-Eastern Asia and Africa.

The single-horned rhinoceros is not exceeded in size by any land animal except the elephant, and in strength and power it gives place to none. Its nose is armed with a formidable weapon, a hard and solid horn, some-



GREAT INDIAN RHINOCEROS.

times more than three feet in length, and, at the base, eighteen inches in circumference; and with this it is able to defend itself against the attack of every ferocious animal.

The body of the rhinoceros is defended by a skin so hard as to be almost impenetrable, except in the under parts, by either knife or spear.

Some hunters have created the impression that the hide of the rhinoceros will turn a leaden bullet and sometimes an iron one. This is a popular error, for a common leaden ball will pierce the hide at a distance of thirty or forty paces, especially if a double charge of powder be used, which is the

custom with all rhinoceros hunters. The most deadly aim is just behind the shoulder. The skull is too thick and the brain pan too small for a successful shot at the head.

I once had an excellent opportunity to observe the fighting quality of the rhinoceros in conflict with other animals. It was in the province of Oude. I had become separated from my men and had lost my bearings. Night overtook me, and I decided to camp on the banks of a lagoon beneath



INDIAN RHINOCEROS FIGHTING AN ELEPHANT.

a huge peepul tree. How long I had slept, I know not, but the moon was almost perpendicular when I awoke, and it was as bright as day. A sudden harsh scream was the cause of my rousing up. I knew it well.

It was the trumpet of an elephant!

Instinctively I bounded to my feet, and looked around me in consternation. I was in the midst of a herd of wild elephants!

The danger of my position flashed on me in an instant. The wild

elephant is a dangerous brute at the best of times, but at night, and in herds, he tramples over everything, and feels more at home and free from danger than in the day, apparently.

But these elephants did not seem to be aware of my presence. They were evidently excited about something else, and had not observed me, asleep in the shadow of the peepul.

They were rushing about in the open ground, most of those I could see being females, as I knew by the absence of the tusks, and some sort



INDIAN RHINOCEROS AFTER SHEDDING ITS HORN.

of contest seemed to be going on among them. What it was, I could not see at first.

At last a chorus of trumpeting and vicious pig-like squeals broke out from the center of the moving mass, and I saw the female elephants scatter right and left in dismay.

Then I discerned a terrible conflict. A huge bull elephant rushed forward, with his trunk curled up tightly behind the long formidable tusks out of harm's way, striving to pierce a strange antagonist.

A long, low, uncouth-looking beast, of some five feet in height at the

shoulder, and shaped much like an immense hog, was running full tilt at the old elephant.

The short, upright horn on the snout, the contour of the animal, and the loose folds of skin that covered his ribs, proclaimed that most dangerous of all animals, the Indian rhinoceros.

If it had been alone, and I had met it, I should have counted myself lost, such is the sullen and vindictive nature of this horrible beast. It is the only animal known that will attack man habitually, wherever met, and all the other wild beasts of India fear and avoid it.

But for the present the attention of the rhinoceros was fully engaged. Besides the old bull now charging at him, another younger one was skulking around to take him in the rear, and a third lay close by, with his entrails gushing out of a frightful wound inflicted by the deadly horn. As I looked, the old bull elephant made his charge, that seemed as if it would carry everything before it.

But the rhinoceros, with surprising agility for a creature of such unwieldy appearance, leaped actively to one side, and, running around, tried hard to get in at the unprotected flank of the elephant. The latter as sharply threw his hind-quarters around, and received the pig-like brute on his tusks. But, deprived of the impetus of his charge, he was unable to pierce the tough hide of the rhinoceros, which is thick enough to turn a leaden bullet at close quarters.

Then the two stood head to head for some minutes, the rhinoceros striving to wriggle his way between the forelegs of the elephant, to use his horn with effect. The elephant, on his part, strove hard to pin the rhinoceros to the earth, but in vain.

Presently I noticed the second elephant. He was charging, and close to the rhinoceros. The latter saw him, too, and suddenly broke away from his first antagonist, rushing to meet the second. The young bull charged gallantly, but he was not up to the tricks of his wily adversary. The rhinoceros swerved, as he came, and the excited elephant missed his mark, lumbering past in vain effort. Not so the rhinoceros. As quick as thought he rushed in at the unguarded side of his heedless foe, and I could see him working away at the elephant's side, like a pig rooting. The elephant gave a hoarse roar of pain, and tried to turn, but the active rhinoceros was too quick for him, and he fell down, helpless and dying.

And now came the turn of the old bull. Cautious and wary, he watched his opportunity, and rushed at the rhinoceros from the side. The latter,

owing to his engagement with his other enemy, and his somewhat defective vision, did not see him till too late.

The great bull elephant thundered on like an avalanche, and in an instant more the terrible tusks, nearly seven feet in length in the clear, as I judged, were buried in the side of the redoubtable rhinoceros.

A shrill squeal of pain from the latter, and he tried in vain to extricate himself. The battle was over. He had slain two elephants, and died game himself.

I cannot tell you the absorbing interest with which I had watched this



TWO-HORNED AFRICAN RHINOCEROS.

curious conflict. True I was an unwilling spectator, for I did not dare to move out of the shadow of the tree, for fear of attracting notice. Now, however, an idea struck me.

Excited and furious as the old bull was, it was probable that the flush of his victory might make him tenfold more dangerous to me.

The battle had moved so close to me, during the vicissitudes of its varying fortune, that the last elephant, in his fall, had almost brushed the foliage of a bush I stood behind. My resolution was taken in an instant,

I must kill the old bull, or be killed myself almost inevitably. He was not ten feet from me, and striving to pull clear from the body of the rhinoceros, which he had pinned into the very ground.

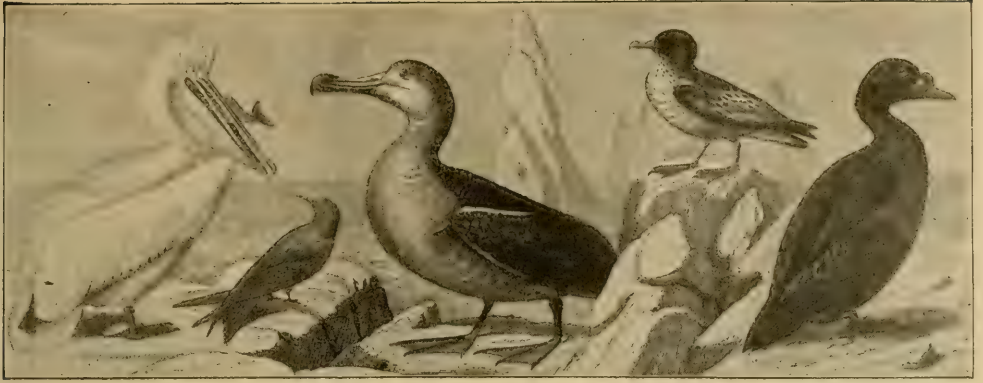
I ran round the fallen elephant, and, before he could draw clear, I stood almost touching his temple with my rifle.

One flash! It was enough! Struck through the brain, the old bull dropped instantaneously, and I was safe!

The female elephants, panic-stricken at the noise and the flash, scattered in all directions in dismay.

In five minutes I was alone!

In Southeastern Africa both species of rhinoceros generally leave their lairs about four o'clock in the afternoon, or, in districts where there are many human beings, somewhat later. They commence feeding in the direction of their drinking places, to which they travel by regular beaten paths, and arrive at the same somewhere about dark. If the drinking place is a mudhole they frequently refresh themselves with a roll, after drinking their fill. They then start for their favorite thorn feeding grounds, where they remain till daybreak, when they generally again drink. At an earlier or later hour after this, the time being to some extent dependent on the freedom of the district from human intrusion, they retire to their sleeping places, which they reach at any rate before the heat of the day. The lair is always in an extremely sheltered and deeply-shaded spot, and so heavily do they slumber that a practiced stalker could almost touch them with the muzzle of a gun, unless they are awakened by the birds which always accompany them.



THE STORY OF THE MUSK-OX

As every school boy knows, the toad has a remarkable power of expansion, which is used in time of danger to terrify the enemy. This is done by inflation and probably does deter the small snake from attempting to swallow the enlarged toad. The musk-ox has a similar habit of showing his ugly head lowered as though about to charge whenever he scents danger, but the instant he is attacked he seeks safety in flight. The animal is found only in Arctic America and exhales a strong musky odor at certain seasons of the year. It is a heavy-built, but not large creature with short legs, and a very lengthy brown hairy-coat, which almost reaches to the ground. Its horns are very similar in form to those of the Cape buffalo, and in the bulls they meet in the middle line of the forehead. The tail is very short, being entirely hidden by the fur of the haunches.

The musk-ox herd together in bands, and generally frequent barren grounds during the summer months, keeping near the rivers, but retire to the woods in winter. They seem to be less watchful than most other wild animals, and when grazing are not difficult to approach, provided the hunters go against the wind. When two or three men get so near a herd as to fire at them from different points, these animals, instead of separating or running away, huddle closer together, and several are generally killed. The musk-ox feed on the same substances as the reindeer; and the prints of the feet

of these two animals are so much alike, that it requires the eye of an experienced hunter to distinguish them.

The musk-ox is about two-thirds the size of the American bison, but from its long coat of hair looks larger than it really is. In appearance the animal has been compared to a large hairy ram; and it resembles the sheep in the marked convexity of the profile of the face and the hairy muzzle.

The musk-ox feeds on grass and moss during one part of the year, and



HEAD OF BULL MUSK-OX.

on lichens during the other part. Notwithstanding the shortness of its limbs, it gallops with great speed, and the facility with which it climbs mountains can only be compared to that of goats.

Occasionally the Esquimaux undertake an expedition into the interior for the purpose of hunting the musk-ox for the sake of its warm fur, which is used either for their own bedding, or as an article of barter. The animals are hunted by means of dogs, each hunter taking two or three of these animals

with their sledge-traces attached, and thus allowing himself to be pulled along till within a short distance of the quarry. The difficulty is then to slip the dogs at the right moment without allowing their traces to drag behind them, and thus be liable to be trodden on by the bayed musk-oxen; but clever hunters obviate this by tying the traces in a bundle on the backs of the dogs just before they are slipped. When bayed and surrounded, the members of the herd are shot down by the score, the great object being to kill each animal outright, as otherwise there is great danger of its struggles



MUSK OXEN AT BAY.

inducing a stampede among the herd, which would involve another hunt. Sometimes, however, the herd, even after having made a bolt, will return to the spot where their comrades have fallen. When scenting danger, the musk-oxen always retreat to some elevation near by, and upon the approach of the enemy they form in a perfect line, their heads toward their foe; or, if attacked at more than one point, they form a circle, their glaring, blood-shot eyes restlessly watching the attack; and I think it would go hard with

the man or beast who, under such circumstances, might come within reach of their broad horns or hard hoofs.

One of them—the oldest of the herd—places himself in front, like a general at the head of his army, and advances cautiously to reconnoitre the enemy, watching attentively each least movement on the part of the hunters. This survey being accomplished, he retires to his post, and awaits the attack. Then it is that this animal appears in all his majestic beauty, and, when the hunter finds himself for the first time in his presence, he must muster up his courage and strengthen his nerves.

But, although seemingly so terrible, these animals, either stupid or over-confident in their strength, allow the hunters to approach within a short distance, and then, at the first gunshot, the whole herd takes flight, abandoning the dead and the wounded. I have often seen five or six hunters destroy a herd of a score of them. On one occasion only have I seen one of these animals charge; it is true that the poor beast had twelve balls in his body, and, being unable to fly, he defended himself to the last moment.

Another time I found them of a different temper. Singling one of the herd, I sent three bullets into him, but the ox, instead of flight, turned on me, followed by the herd, and I owed my safety entirely to a large fragment of rock, behind which I took refuge, the animal's head coming in contact with it with a force so prodigious that he was actually thrown upon his haunches.



THE STORY OF THE GIRAFFE.

One of the most curious sights I ever witnessed was a giraffe drinking. It was on the edge of Kalahari Desert in South Africa. I had gone into camp near a stream, and while my men were preparing the evening meal, I was reclining near a clump of bushes, enjoying my pipe—a Boer fashion of smoking before meals, as well as after—when I heard a noise near the stream below me. Looking in that direction I saw a pair of full grown young giraffes that had stopped at the edge of the stream and were preparing to drink.

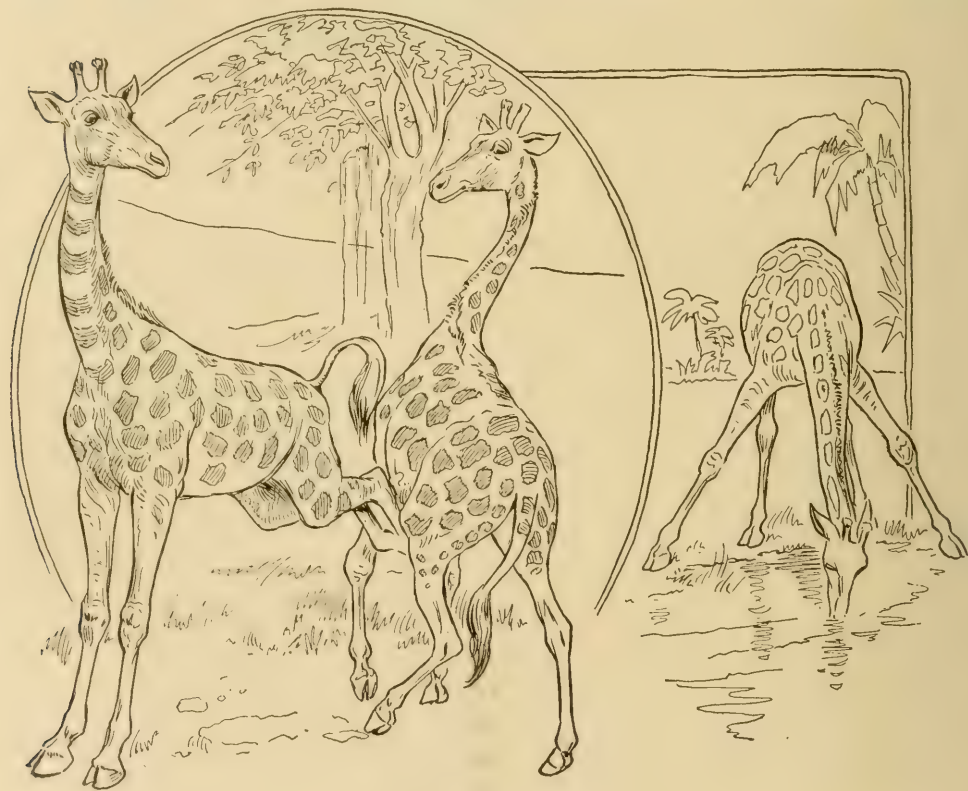
Although they have such long necks they are not long enough to reach the ground when the giraffe is standing in an ordinary position.

The male giraffe placed one forefoot slightly in front of the other and then began straddling his forelegs wide apart. Little by little with a jerky motion he spread his legs until they were far enough apart to enable him to reach the water, but he made three attempts before he was successful. He was such a comical sight that I burst out laughing. They heard me, looked up and saw me, and then took to their heels.

My native men had told me that the giraffe never drinks, but I knew then that they were mistaken. It is certain, however, that the giraffes of the North Kalahari Desert will go from seven to eight months without water.

The giraffe is the tallest, most graceful, and one of the most remarkable

of all animals. It belongs to a family apart from any other in natural history. The chief point of contrast, and one which has been the source of much discussion among scientific men, is the pair of horn-like appendages on the top of the giraffe's head. As it is largely owing to the peculiar nature of these appendages that the giraffe is referred to a distinct family, they require somewhat fuller notice. These horns, as they may be conveniently called, are only a few inches in length, and are present in both sexes, making



HABITS OF THE GIRAFFE.

their appearance even before birth. They are at first entirely separate from the bones of the skull, although in later life completely uniting with them. They are thus essentially different from the horn-cores of the oxen and their allies, from which they are likewise distinguished by being invested with skin instead of horn.

This beautiful and extraordinary animal is found only in South Africa.

In the opinion of modern naturalists, it holds a place by itself between the deer and antelopes; it forms, at all events, a group to which no other animals belong. The height of the giraffe varies from thirteen to eighteen feet. Its beautiful long neck enables it to browse on the leaves of the trees on which it feeds. It is very dainty while feeding, and plucks the leaves one by one with its long, flexible tongue. The females are of lower stature, and more delicately formed than the males.

The movements of the giraffe are very peculiar, the limbs of each side



GIRAFFES OF THE KALAHARI DESERT.

appearing to act together. It is very swift, and can outrun a horse, especially if it can get among broken ground and rocks, over which it leaps with a succession of frog-like hops.

The senses of both sight and hearing are highly developed; and the lofty position of the head gives to the soft and liquid eyes a wide field of view. The animal's only means of defense is by kicking out with its legs; and the blows thus delivered are of terrific force and power. This mode of attack is

employed by the cow in defending her young, and likewise in the contests which take place among the males during the pairing season.

Some writers have discovered ugliness and a want of grace in the giraffe, but I consider that he is one of the most strikingly beautiful animals in the creation; and when a herd is seen scattered through a grove of the picturesque parasol-topped acacias which adorn their native plains, and on whose uppermost shoots they are enabled to browse through the colossal height with which nature has so admirably endowed them, he must indeed be slow of conception who fails to discover both grace and dignity in all their movements.

As in the case of most wild animals, the surroundings of the giraffe are a protection to him. Among the great South African forests, where innumerable blasted and weather-beaten trunks and stems occur, I have repeatedly been in doubt as to the presence of a troop, until I had recourse to my field glass, and I have known even the practiced eye of the natives deceived, at one time mistaking these trunks for giraffes, and again confounding real giraffes with these aged veterans of the forest. The dappled hide of the giraffe blends harmoniously with the splashes of light and shade formed by the sun glinting through the foliage of the trees beneath which the animals take their stand, and thus intensifies the illusion.

Giraffes range in herds of sixteen to one hundred. They are hunted principally for their hides, which are worth from twenty-five to forty dollars each.

I never shot one of these harmless, beautiful creatures, although I have had many opportunities.



THE STORY OF THE FOX.

Fox-hunting is a common but exciting sport in both England and America. Both the red and the gray fox leave a trail that is easily followed by the hounds. The well-known scent of the fox is secreted as it runs and is easily detected by the human as well as the canine nose. There is no doubt that the natural cunning of the fox has been greatly increased by long experience in matching its wits against dogs and hunters, for in countries where the fox is not hunted it is far less cunning than either the gray or red fox of America and England.

The reds are bolder in pursuit, and hunt over a much greater territory than the grays. Whether the grays ever climb trees in pursuit of prey I am uncertain, but they take to a tree as readily as a cat when run hard by hounds. I think it nearly certain that they climb for persimmons and grapes. Red foxes never climb trees under any circumstances; when hard run they go to earth. Gray foxes run before hounds only a short distance, doubling constantly and for a short time, when they either hole in a tree, or climb one. I have known the red fox to run straight away nearly twenty miles. Very commonly they run eight or ten miles away, and then run back in a parallel course. I have known them to run the four sides of a square. It is doubtful whether a first-rate specimen of the red fox, taken at his best in point of condition, can either be killed or run to earth by any pack of hounds living, such are his matchless speed and en-

duration. It is but a sorry pack which fails to kill or tree a gray fox in an hour's run. The young of the gray fox closely resemble small blackish puppies; those of the red fox are distinctly fox-like from the hour of their birth.

Many tales are related of the fox's cunning when pursued, such as driving another fox out of its home, and forcing it to substitute itself as the chase; diving into a heap of manure, so that the dogs could not perceive its scent; jumping over a wall, running a little way, coming back again, and lying under the wall until all the dogs had passed, and then leaping



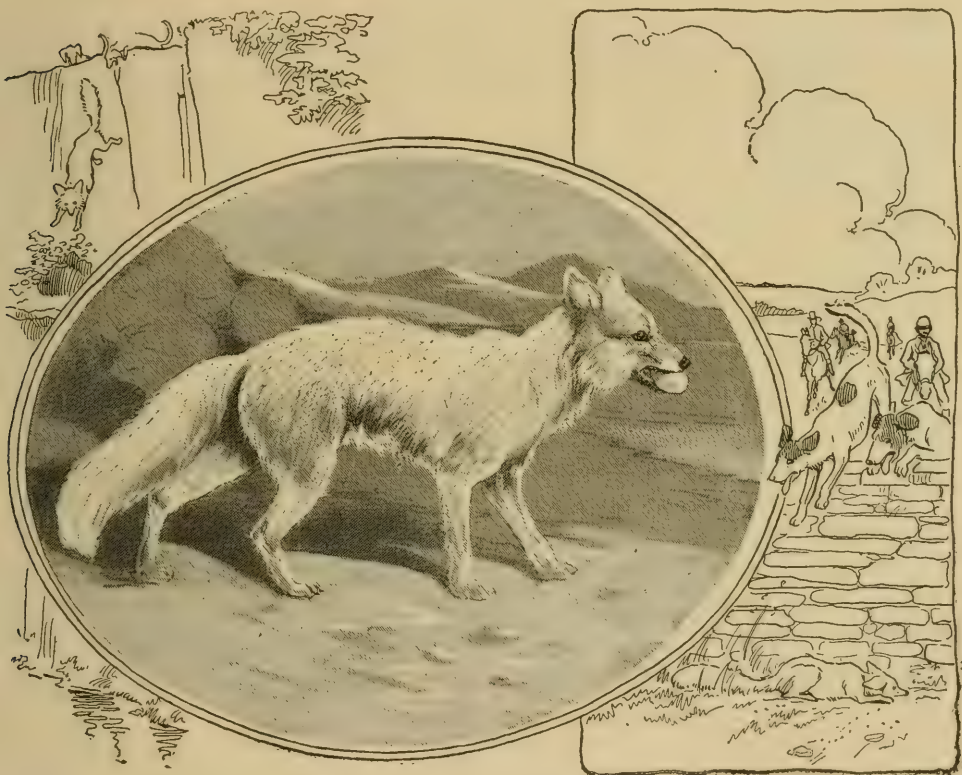
RED FOXES IN WINTER.

a second time over the same place where it had passed before, and making off on its old track.

On the banks of the Kentucky River rise huge rocky bluffs, many feet in height. A fox that lived near this river was constantly hunted, and as regularly lost over the bluff. Now, nothing short of wings would have enabled the animal to escape with life down a perpendicular cliff. At last I determined to discover the means by which the animal baffled all of us, and I concealed myself near the bluff.

Accordingly, in good time the fox came to the top of the cliff and looked over. He then let himself down the face of the cliff by a movement between a leap and a slide, and landed on a shelf not quite a foot in width about ten feet down.

The fox then disappeared in a hole above the shelf. On examination the shelf turned out to be the mouth of a wide fissure in the rock, into which the fox always escaped.



ARCTIC FOX WITH MURRE'S EGG.

But how was he to get out again? He might slide down ten feet, but he could never leap ten feet from a ten-inch shelf up the face of a perpendicular rock. This impossibility caused me to make a search, and at length I discovered an easier entrance into the cave from the level ground.

The fox was too wise to use that entrance when the hounds were behind him, so he was accustomed to cut short the scent by dropping down

the rock, and then, when all the dogs were at the edge of the cliff, he walked out at his leisure by the other entrance.

The fox is a native of almost every quarter of the globe; it is of so wild and savage a nature, that it is impossible fully to tame him. He is esteemed the most sagacious and crafty of all the beasts of prey. The former quality he shows in his mode of providing for himself an asylum, where he retires from pressing dangers, dwells, and brings up his young; and his craftiness is discovered by his schemes to catch lambs, geese, hens, all kinds of small birds, rabbits and field mice.

When it is possible for him conveniently to do so, the fox forms his burrow near the border of a wood, in the neighborhood of some farm or village. He there listens to the crowing of the cocks, and the cries of the poultry. He scents them at a distance; he chooses his time with judgment; he conceals his road, as well as his design; he slips forward with caution, sometimes even trailing his body; and seldom makes a fruitless expedition. If he can leap the wall, or creep in underneath, he ravages the barn-yard, puts all to death, and retires softly with his prey; which he either hides under the adjacent herbage, or carries off to his kennel.

With regard to the caution displayed by foxes in taking a bait, I once had the good fortune of observing, on a winter evening, a fox which for many preceding days had been allured with loop baits, and as often as it ate one it sat comfortably down, wagging his brush. The nearer it approached the trap, the longer did it hesitate to take the baits, and the oftener did it make the tour round the catching-place. When arrived near the trap, it squatted down, and eyed the bait for ten minutes at least; whereon it ran three or four times round the trap, then it stretched out one of its fore-paws after the bait, but did not touch it; again a pause, during which the fox stared immovably at the bait. At last, as if in despair, the animal made a rush, and was caught by the neck.

The kit fox is the smallest and prettiest of North American foxes. It lives in an open, treeless district and makes its burrow in the ground. The back and tail are dark gray and the under parts white.

The Arctic fox, which is found all over the Arctic region, differs from all other members of the fox family, particularly in its change of dress from summer to winter. In summer it is bluish gray on the back, and white beneath. In the winter its coat turns to a pure white, so that it can scarcely be distinguished from its snowy surroundings. In the long Arctic nights the hunter constantly hears its yapping bark. In the sum-

mer it preys upon the numerous land and aquatic birds. What it lives on in winter when the birds have left for a southern latitude no one seems to know, although it is believed that, like the squirrel, they lay by a store of provisions during the summer months. The Arctic fox is fond of bird's eggs as well as of birds, and I once shot one which had a murre's egg in its mouth.

In Asia there are several breeds of desert foxes, the largest specimens



AFRICAN ASSE FOX.

having a striped appearance. In Central Asia we find the Corsac fox, of a paler color, white under parts, a black-tipped tail, and lacking the stripe of the desert fox.

It is a thin-brained creature, possessing none of the cunning of the red and gray foxes of Europe and America. It is too lazy to make its own burrow, and finds its home in the burrow of the marmot, which that animal has either deserted or from which he has been evicted.

Of the true foxes the pretty little Indian fox is the smallest, measuring

only twenty inches from the tip of the snout to the root of the tail. Its fur is gray, tinged with red. It is by no means timid, and I have shot one that walked up boldly to my camp. Its burrow is in the open plain, and it lives on lizards, rats, crabs, white ants and various insects.

The Indian fox has no scent, and therefore is seldom hunted with hounds.

Another small and pretty member of the fox family is the fennec, of Northern Africa. It has enormous ears for such a small animal. The color



FENNECS, OR AFRICAN FOXES.

of the fur varies from fawn to buff, the under parts being white, and the tail black.

Like the common fox, the fennec makes a burrow, which is generally in the tufts of low plants in the desert. The inside of the burrow is lined with feathers, hair, and soft vegetable substances, and is remarkable for its cleanliness. The burrows are made with wonderful rapidity—so quickly, indeed, that the animal seems to sink into the ground.



THE STORY OF THE SEAL.

When the killing of wild animals is done for commercial purposes only it is deprived of all elements of sport and becomes merely a trade or occupation.

The true sportsman, therefore, takes no enjoyment in "sealing," as the killing of seals is called, yet the seal is by far the best of the fur-bearing animals. It possesses remarkable intelligence and is of an affectionate disposition.

The best skins are afforded by the young seals, and these are prepared for use by the inner layer of the skin being shaved away with a sharp knife, thus causing the long hairs, which are deeper rooted than the woolly underfur, to fall out.

During the early part of the last century fur seals existed in countless numbers in many parts of the world, but human greed and folly have succeeded in so reducing their numbers in most regions that their pursuit is no longer profitable. Fortunately, however, the seal rookeries of the Pribiloff Islands in Bering Sea have been placed under such restrictions as to restrict the annual slaughter in proportion to the number of births. As an indication of the number of fur seals formerly existing in various parts of the world, I may say that in the year 1798 Captain Fanning, of the ship *Betsy* of New York, after obtaining a full cargo of skins from the island of

Musapura, on the Chilian coast, estimated the number of fur seals remaining on the island at from 500,000 to 700,000; and it appears that but little less than a million skins were subsequently taken from the same locality. Fur seals were still found on the Chilian coast in 1815. From the Georgian Islands, at the extremity of South America, no less than 112,000 fur seals are reported to have been taken in the year 1800, of which 57,000 were obtained by one American vessel. About this date the discovery of fur seals in Australia was announced, and in 1804 a single ship obtained 74,000 skins. Large numbers were also taken about the same period on Prince Edward's Islands, lying a few hundred miles to the southeastwards of the Cape of Good Hope. Again, between the years 1820 and 1821, more than 300,000 skins were taken from the South Shetland Islands alone, while it is estimated that at least 100,000 young seals were left to perish miserably, owing to the destruction of their mothers. In 1814 and 1815 the number of skins exported from Antipodes Island, off the coast of New South Wales, was upwards of 400,000, of which, it is said, no less than a fourth were spoilt owing to bad curing, and on arrival in Europe were sold as manure. As early, however, as the year 1830 the number of fur seals in the southern seas had been so greatly diminished that vessels generally made losing voyages; and at the present day such a voyage partakes largely of the nature of a lottery. The number of skins taken in the Prybiloff Islands is still large but it may be mentioned that at the present time the annual slaughter of fur seals throughout the world averages 185,000, while that of hair seals reaches the enormous number of 875,000.

When seals are taken very young they can be made as tame as a cat or dog, answering to their names and following their owners. Two little children once had a young seal brought to them from Alaska. It soon became very fond of them, living in the house, and eating from their hands. Visitors used to be much amused by its funny ways, and it was a curiosity for miles around. After a time the children were sent away to school, and their parents presented the seal to a neighboring zoological garden, where it was the delight of the keepers on account of its tameness. Three years after the children returned, and decided one day to go to see their old favorite, not imagining that it would remember them, but to their surprise it was so delighted to see them that it was almost ill from the excitement. It barked and whined like a dog, and when they left retired to a corner, where it pined and moped for days, refusing to touch its food, and not taking any notice of the keepers, with whom it was usually so

affectionate. The children soon after paid it a second visit, when it renewed its demonstrations, whining piteously if they left it for a moment. When they heard how unhappy it had been they begged to have it back, and as the authorities were afraid it might pine to death if left there, they consented, and it returned to its old home, where it passed many happy years with its beloved master and mistress, who never parted with it again.

The usual length of these animals is five or six feet. The head is large



A GRAY SEAL.

and round, the neck small and short, and on each side of the mouth there are several strong bristles. From the shoulders the body tapers to the tail. The eyes are large, there are no external ears, and the tongue is cleft or forked at the end.

The legs are very short, and the hinder ones are placed so far back as to be of but little use, except in swimming. The feet are all webbed. The tail is short. The animals vary in color, their short, thick-set hair being some-

times gray, sometimes brown or blackish, and sometimes even spotted with white or yellow.

Seals delight in thunderstorms, and during these times they will sit on the rocks and contemplate with apparent pleasure and gratification the convulsion of the elements.

The Icelanders entertain, respecting these animals, a strange superstition. They believe them to resemble the human species more than any other creature, and that they are the offspring of Pharaoh and his host, who were converted into seals when they were overwhelmed in the Red Sea.

One very curious result sometimes follows from the manner in which the seal shuffles along. If it is alarmed upon a stony or shingly beach, it at once makes for the sea as fast as possible, jerking itself along with its hind flippers, and so throwing up the stones behind it in showers. If a hunter is in the chase, he is, of course, struck by many of these stones, and with such force are they propelled that for years it was thought that the seal purposely resorted to this mode of defense, and actually took aim at its pursuer. I have discovered that the only object of the seal is to reach the sea as fast as possible, and that the stones it throws up are merely jerked up in the air by its hind feet, and are not in any way meant as weapons of defense.

Near the city of San Francisco, and not far from a hotel on the shore, is a rock called Seal Rock, which is usually covered with seals, which sport there all day long, to the great amusement of the people, who watch them from the hotel piazza. They are not at all afraid, for no one is permitted to harm them. In warm sunny days they may be seen climbing up on to the rocks and sliding down again into the water, barking as if they enjoyed it. Some sleep in the sun, wake up and bark, slide down into the sea, and then crawl up again and bark, keeping it up all the day. Partly on account of the structure of the ear and partly because the seals pass so much of their time below the surface of the water, it has been supposed that the sense of hearing will be little needed by them, and that it is not at all acute.

Yet any one who has been accustomed to diving must have discovered that when the body is entirely submerged in the water, the auditory organs are very sensitive to sounds which are conveyed through the water, although not to those which are produced on land, and are only transmitted through the upper atmosphere.

For example, although when a man is entirely submerged he is unable to hear the loudest shouts that can be raised by persons on shore, his ears are almost painfully sensitive to any sound that is produced in the water

and is transmitted through its mediumship. A stone thrown into the water, or a blow struck upon its surface, is heard with perfect distinctness, while the measured strokes of the oars, and their peculiar grinding roll in the rowlocks, become perceptible to the ears long before the sound is audible to those who are on land.

When expeditions set out to capture sea-lions, the animals are driven a distance of from ten to twelve miles along the shore to the villages of the natives where they are to be killed; and from their slow rate of motion the



THE CALIFORNIA SEA LION.

journey is a long and protracted business, usually taking about five days. When once fairly started, and accustomed to the presence of man, the animals are, however, readily controlled, and kept in the desired direction. At the end of a day's journey they are allowed to refresh themselves by plunging in the pools found in many parts of the route. When thoroughly tired out at the end of a day's march, the unfortunate animals stretch themselves at full length on the ground, with extended limbs. Even then, however, their rest

is not peaceful, for some restless one soon starts up and flounders over the others, as if seeking a better place. This disturbs the whole herd, which constantly keeps up a low moaning, apparently expressive of sore distress. By this time the sea-lions have become so accustomed to their captors that they will sooner fight than run from them; and they are too much deafened by their own noise to hear or fear any other sound. As they lie on the ground in a compact mass, one of the men takes an umbrella, and goes twenty to thirty yards to the rear of the herds, and approaching stealthily until he is quite near, suddenly expands the umbrella, and runs with it all along the edge of the herd; then, closing it, he retires to repeat the manœuvre. This has the effect of rousing the rear rank, which, thus suddenly alarmed, plunges forward and arouses those in front, which suddenly begin struggling and biting. The return of the man with the umbrella communicates another shock, and adds another wave to the sluggish mass. This is repeated at intervals of four or five minutes, till the successive shocks have aroused the whole herd, when, with much roaring and bellowing, the whole mass begins to move, gradually extending itself in a long irregular line in open order, each animal lumbering along as best it can. By shouting and waving flags at the rear, and on the flanks of the herd, they are kept moving until it is necessary to halt them again for rest.

Finally, the herd reaches the village, when the sea-lions, being far too formidable animals to be despatched with clubs, are shot with rifles; the full-grown males being killed first, after which the fore-part of the herd is driven back upon and over the rear, when the slaughter is continued with lances. The description of this scene is, however, by no means pleasant reading, and may accordingly be passed over.

In captivity these sea-lions display great affection for one another; and when one of a pair dies the survivor not infrequently pines away and dies soon after. From observations made on captive specimens in Chicago, it appears that before the cub takes to the water the parent secretes a kind of oily fluid from her body, with which the hair of the cub becomes anointed, owing to both animals rolling on the same spot.

A curious circumstance I discovered is that in the stomach of every sea-lion I have examined, with the single exception of a young animal, there existed a quantity of pebbles. The amount varied in individuals from a few to many. Some of these pebbles weighed as much as a half pound.

A seal that was exhibited in London answered to the call of its keeper, and attended to whatever he was commanded to do. He would take food

from the man's hand, crawl out of the water, and when ordered would stretch himself out at full length on the ground. He would thrust out his neck and appear to kiss the keeper as often as the man pleased, and when he was directed would again return into the water.

Some time ago a farmer of Aberdowr, a town on the banks of the Frith of Froth, Scotland, in going out among the rocks to catch lobsters and crabs, discovered a young seal about two and a half feet long, which he brought home. He offered it some pottage and milk, which the animal greedily devoured. It was fed in this manner for three days, when the man's



HOOKER'S SEA LION.

wife, considering it an intruder in her family, would not suffer it to be kept any longer. Taking some men of the town along with him for the purpose, her husband threw it into the sea, but notwithstanding all their endeavors it persisted in returning to them. It was agreed that the tallest of the men should walk into the water as far as he could, and, having thrown the animal in, that they should hide themselves behind a rock at some distance. This was accordingly done, but the animal returned from the water and soon discovered them in their hiding-place. The farmer again took it home,

where he kept it for some time; but at length growing tired of it had it killed for the sake of its skin.

The chief sealing districts, or, as they are called, "sealing-grounds," in the Arctic and North Atlantic oceans are West Greenland, the Newfoundland district, the Jan-Mayen seas, Nova Zembla and the Kara Sea, the White Sea, and the Caspian. The most important of these is the Jan-Mayen, where, as in all other districts except the Caspian, the Greenland seal is the kind mainly hunted. So incessant and unremitting has been seal-hunting in the icy Jan-Mayen seas that the numbers of these animals have been very sensibly diminished; and as far back as 1871 attention was called to the necessity of some stringent regulations being applied to the sealing trade. This was followed in 1876 by an enactment on the part of the British Government establishing a close-time for seals, so far as their own subjects were concerned; and not long after similar action was taken by the other governments interested.

The chief sealing-trade in the North Pacific was the capture of the elephant-seals on the Californian coast—a trade which has of necessity come to an end by the extermination of the object of pursuit. In the more southern seas the trade was likewise confined to the capture of elephant-seals. From their great abundance and their large size, the pursuit of these animals was a paying occupation in the early years of this century. Now, however, as we have seen, these seals are exterminated from most of their former haunts, and only remain in any numbers on Kerguelen and Heard Islands, where they would also long since have disappeared had it not been for the inaccessible nature of the beaches they frequent. Consequently, the southern sealing-trade has now shrunk to almost nothing, although there is a prospect of it being revived in the neighborhood of the Antarctic pack-ice.

Of the various methods of capturing seals in the northern seas notably the oldest is that of harpooning from canoes, or kayaks, as now practiced by the Esquimaux. The kayak, which is made of skins, although upwards of eighteen feet in length, is so light as to be easily carried in the hand. In "sealing" the victim is approached within some twenty-five feet, when the harpoon is hurled from a wooden "thrower." The harpoon, in addition to its line, is furnished with a bladder attached by another cord, which marks the course of the seal while below the water, and enables the hunter to follow its track and wound it with his lance time after time as it comes to the surface to breathe, until it is finally despatched. The lance is thrown from the hand, and, after striking the seal, always detaches itself and floats on the surface.

A large number of seals are also captured in nets, this method being chiefly employed during the spring and autumn visits to the shore. Nets appear to have been in use longest in the Gulf of Bothnia, the Caspian Sea, and Lake Baikal, where they are set either from the shore or beneath the ice. In the Gulf of Bothnia such nets are from sixty to ninety feet in length, and about six feet in depth. Two of them are generally set together in the neighborhood of rocks to which the seals resort, and are always placed to the leeward of the mainland or some headland. When they strike against the nets, the seals thrust their heads through some of the meshes, and by twisting themselves about gradually become completely involved. In the Caspian Sea the



LEOPARD SEAL.

nets are usually hung from boats at a considerable distance from the shore. In Lake Baikal, on the other hand, the nets are let down through the breathing-holes of the seals in the ice, and the animals become entangled on rising.

The seal-box used in parts of Scandinavia is a contrivance with a swinging plank, upon which, when the seal lands, it is precipitated headlong into a deep pit. Another Scandinavian plan is to surround a seal-rock with a line armed with a number of barbed hooks. These hooks allow the seals to land

with impunity; but when a number of the animals are on the rock, and through a sudden fright rush headlong into the water, some of them are pretty sure to be caught. A third method employed in the same country is to fix a harpoon in a tube, with a spring-and-trigger arrangement, and to bury the whole contrivance in a hole bored in a seal-rock in such a manner that when a seal presses against the trigger the weapon will be discharged into its body.

A large number of seals are also shot on the shore with rifles; and others fall to the harpoon of the Esquimaux, who either steals up to them while asleep, or awaits their rising at a breathing-hole. When a large number of seals can be surprised on shore at one of their favorite landing-places, clubbing is resorted to as the most effectual and speedy means of despatch; and it is said that sometimes as many as 15,000 have been killed in this manner in one night.

The above methods apply only to sealing on or near the shore; but for the capture of seals on the ice-floes at long distances from land, vessels of some kind have to be specially equipped. In the Gulf of Bothnia these expeditions are or were carried out in open boats, each manned by eight sailors; but in the Newfoundland and Jan-Mayen seas steamers of considerable size are now employed. When the seals are found on the ice, they are killed in the same way as on shore, that is, either by shooting, harpooning, or clubbing.

The strange circumstance that young seals take to the water reluctantly, and have to be taught the art of swimming by their parents, would alone appear to be a sufficient indication that seals originally descended from land animals. Among some species the young remain entirely on the land or ice for the first two or three weeks of their existence, or until they have shed their first coat of woolly hair. Numbers of seals are destroyed by the Polar bear, while others fall victims to the rapacious killer-whale. Others again are frequently destroyed by being jammed between ice-floes; and it is stated that thousands are sometimes killed by this means. The reduction in their numbers by all these causes is, however, trivial compared to those inflicted by man, who requires about a million and a half to supply his annual needs. So reckless, indeed, has been the destruction of seals, that some species are already well nigh exterminated, while others have been so reduced in numbers as to render their pursuit no longer profitable.



STORY OF THE SQUIRREL.

People who are not intimately acquainted with the squirrel are apt to regard him as a timid little creature. He is one of the friskiest little animals in creation, but he is not timid by any means. Considering his size and means of defense he is one of the most courageous of wild creatures.

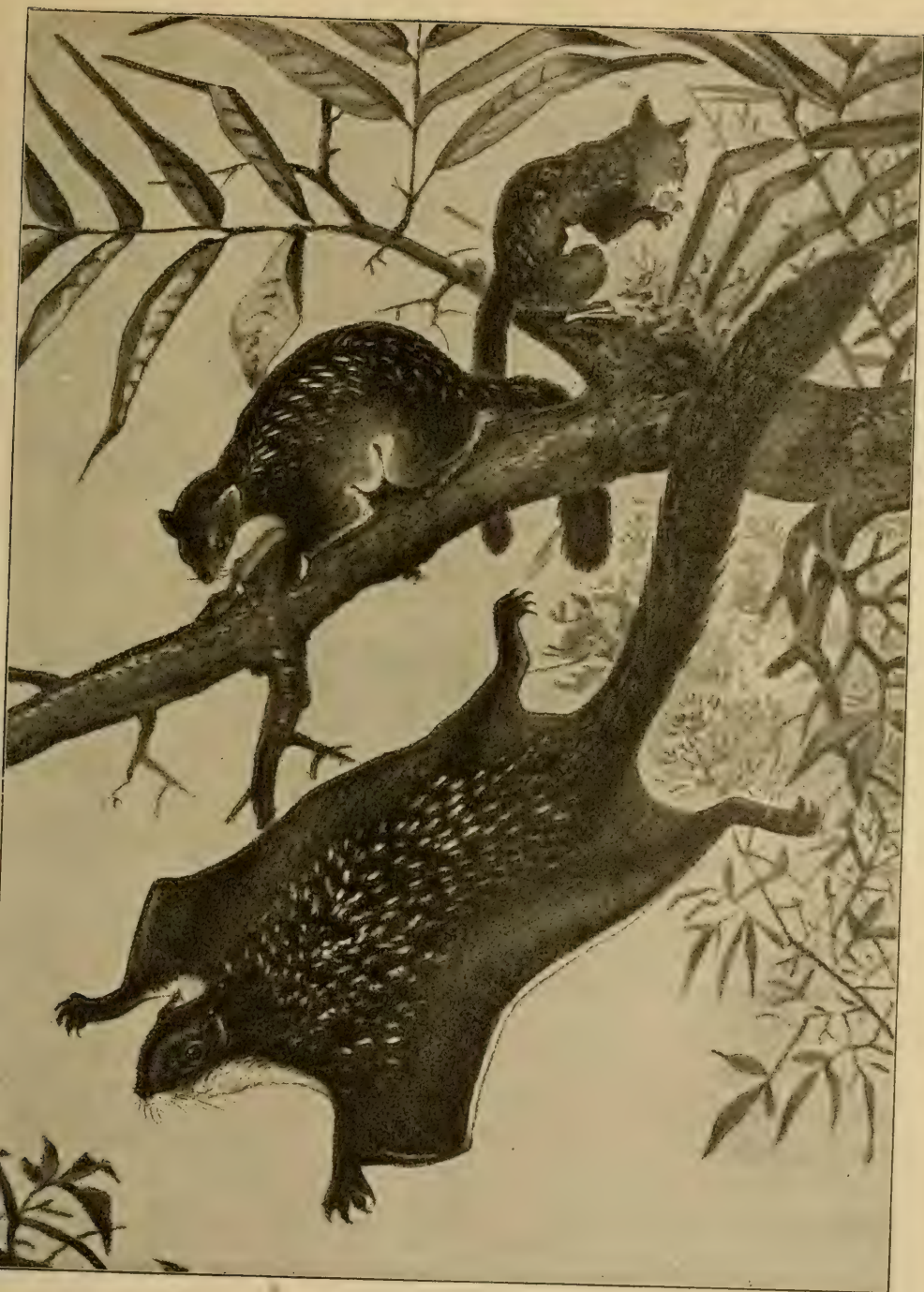
One day with my dog and gun, I was awaiting the approach of a flock of wild fowl, but a little villain of a squirrel, on the bough of a tree close to me, seemed determined that I should not rest in quiet, for he sputtered and chattered with so much vehemence that he attracted the attention of my dog, whom I could scarcely control. The vagrant inattention of my dog was truly mortifying; he kept his eyes fixed upon the squirrel, now so noisy as to be quite intolerable. With my hand, I made a motion to threaten him, but the little beast actually set up his back, and defied me, becoming even more passionate and noisy than before, till all of a sudden, as if absolutely on purpose to alarm the game, he let himself drop down to the ground plump within a couple of yards of Rover's nose. This was too much for any four-footed animal to bear, so he gave a bounce and sprang at the impertinent squirrel, who, in one second, was safe out of his reach, cocking his tail, and showing his teeth on the identical bough where he had sat before. Away flew all the wild fowl, and my sport was completely marred. My gun went

involuntarily to my shoulder to shoot the squirrel. At the same moment I felt I was about to commit an act of sheer revenge, on a little courageous animal which deserved a better fate. As if aware of my hesitation, he nodded his head with rage, and stamped his fore paws on the tree; while in his chirruping there was an intonation of sound, which seemed addressed to an enemy for whom he had an utter contempt. What business, I could fancy he said, had I there, trespassing on his domain, and frightening his wife and little family for whom he was ready to lay down his life? There he would sit in spite of me,—and make my ears ring with the sound of his war-whoop, till the spring of life should cease to bubble in his little heart.

The red squirrel is the most common member of the family; next comes the gray squirrel, and this is followed by the fox-squirrel and the curious flying squirrel. This latter is becoming scarce in the sections east of the Mississippi, where it was formerly very numerous. The skin of the flying squirrel is so curiously formed that they can not only drop from a height without injury, but can even skim for long distances through the air, passing, for example, from one tree to another perhaps forty or fifty yards away. I have often watched the creatures in their native haunts. At times one would be seen darting from the topmost branches of a tall oak, and with wide extended membranes and outspread tail gliding diagonally through the air, till it reached the foot of a tree about fifty yards off, when at the moment we expected to see it strike the earth, it suddenly turned upwards and alighted on the body of the tree. It would then run to the top and once more precipitate itself from the upper branches and sail back again to the tree it had just left. Crowds of these little creatures joined in these sportive gambols; there could not have been less than two hundred. Scores of them would leave each tree at the same moment, seeming to have no other object in view than to indulge a playful propensity.

In India there are several species much larger than those in this country and with a relative greater flight. These measure from 20 to 24 inches in length and extended their parachutes are often 18 inches across. These are capable of a sustained flight of one hundred yards in an almost if not quite horizontal manner.

It is most interesting to find that the tail, which is of such use to the water-inhabiting animals as a rudder by which they can steer their course, is equally of service to the flying squirrel, serving not only to balance the body when the animal is running along the branches, but also to direct and alter the course of the flight. And thus the tail, you see, serves a double



FLYING SQUIRRELS.

purpose, and is just as useful when its owner is in the air as it is when he is gamboling among the boughs of his leafy home.

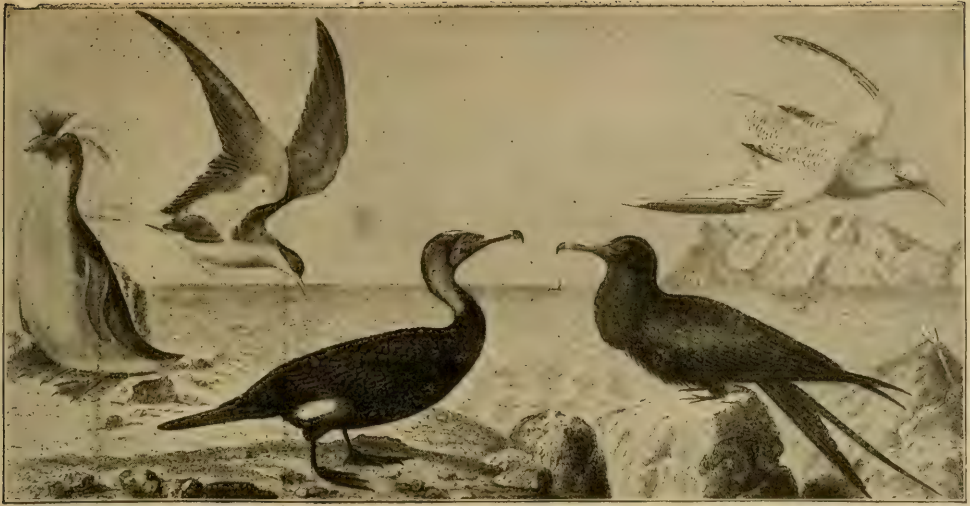
Like ordinary squirrels, these animals subsist mainly on nuts, seeds and buds, but the American species also eats beetles, and probably other insects, and may be taken in traps baited with meat. While in confinement it will but seldom refuse flesh. The American flying squirrels construct nests in the hollow trees they haunt, and in the cold winters of the Adirondack region



THE SQUIRREL AND ITS HABITS.

near New York they retire to these nests, and probably hibernate. The same habits will doubtless hold good for those inhabiting Kashmir and Afghanistan, but those inhabiting India proper and the warm Malayan region remain active at all seasons.

In the daytime these squirrels remain concealed in hollow trees, and only issue forth at sunset in quest of food.



THE STORY OF THE OTTER.

Were it not for the otter's desire to eat goose or duck three times a day his days on earth would be greatly prolonged, but the farmers and poultry growers have no patience with the rapacious animal and sooner or later he forfeits his life for the dainty morsel he is constantly seeking. He is so fastidious as to eat only the best parts of the fowl he has killed.

When the otter cannot secure the food of his choice he will condescend to catch fish or eat the eggs of geese or ducks.

It is extremely interesting to watch the actions of this almost amphibious creature. It slides noiselessly into the water, turns and twists about below the surface with the same or greater ease than a fish, then, with a graceful sweep of the body, it glides to the surface and ascends the bank with almost the same motion. While below the surface it bears a great resemblance to the seal, the method in which it disposes its hind feet greatly assisting the effect. Its rapid and easy movements in the water are mostly performed by the assistance of its powerful tapering tail.

The otter is easily tamed, and its predatory habits have been occasionally turned to account, as it is sometimes trained to catch fish and bring them to

shore, precisely as the falcon is trained to catch terrestrial game. The Hindoos have brought the art of otter training to great perfection, and keep their otters regularly tethered with ropes and straw collars on the banks of the river.

I can bear testimony as to the long journeys undertaken by the otter from river to river across country; these journeys mostly taking place during the winter. On such occasions they go so fast that a man has great difficulty in overtaking them. On the ice they proceed by a series of what boys call "a run and a slide," that is, they make several jumps and then slide ahead flat on their bellies, as far as their impetus and the smoothness of the ice permit, and then do the same thing over again, and so on. A curious habit of this otter is its propensity for sliding down smooth and steep banks, either of snow or of mud. Such gambols have been watched by me several times. It appears that in winter the animals select the highest ridge of snow, on to the top of which they scramble, whence they give themselves an impulse with their hind-legs, and swiftly glide head-foremost down the declivity, sometimes for a distance of twenty yards. This sport they continue apparently with the greatest enjoyment until fatigue or hunger induces them to desist. A pair on a mud-bank made upwards of twenty-two slides before they were disturbed.

The fur of the otter is more valuable than that of any other North American animal, and is in good condition from November till the spring, but is at its best period during the latter season.

Otters are usually caught in steel traps, which are set beneath the water where one of the "slides" or tracks of the animals leads to the margin. Sometimes the trap is, however, placed at the top of the slide and covered with snow. In neither case is any bait used; but in all methods the greatest care is necessary that no traces of the trapper's presence should remain, as the otter has very acute smell and sight, and is exceedingly wary and cunning.

The otter is to be found in every part of the globe, and nearly every species can be tamed. It must be taken young, however, in which case it becomes greatly attached to its master. It will follow him with the faithfulness of a dog, but under no circumstances will it follow any other.

In the Imperial Park, at Stuttgart, Germany, are many ponds in which there are a large number of water fowls. For six or seven weeks a tame otter from a neighboring pond came nightly to feast off the fowls. It carried on its robbery so boldly that guards were set to watch for it. It destroyed all the duck eggs it could find on the islands and main land, and ate young ducks and geese, while old birds died daily from the wounds received from its bites.

It was only with great difficulty that this robber knight was surprised at his work and killed.

The sea-otter is a large marine animal found in some parts of South America. It is also found along the Pacific coast, as far north as Alaska.

The female sea-otter produces but a single young one at a birth, so that the increase of the species can be, at the best, but slow. The young may apparently be born at any season of the year, and do not attain maturity till four or five years old. The mother sleeps in the water on her back, with her young clasped between her fore-paws. The pup cannot live without its



NORTH AMERICAN OTTERS.

mother, though frequent attempts have been made by the natives to raise them, as they often capture them alive, but, like some other species of wild animals, it seems to be so deeply imbued with fear of man that it invariably dies from self-imposed starvation.

The food of the sea-otters is almost entirely composed of clams, mussels, and sea-urchins, of which they are very fond, and which they break by striking the shells together, held in each fore-paw, sucking out the contents as they are fractured by these efforts; they also eat crabs, and the juicy,

tender fronds of kelp or sea-weed, and fish. They are not polygamous, and more than one individual is seldom seen at a time when out at sea. They are playful, it would seem, for I am assured by several old hunters that they have watched the sea-otter for half an hour as it lay upon its back in the water and tossed a piece of sea-weed up in the air from paw to paw, apparently taking great delight in catching it before it could fall into the water. It will also play with its young for hours. The quick hearing and acute smell



A SEA OTTER.

possessed by the sea-otter are not equalled by any other creatures in the territory. They will take alarm and leave from the effects of a small fire four or five miles to the windward of them; and the footstep of man must be washed by many tides before its trace ceases to alarm the animal, and drive it from landing.

The sea-otter is often captured by shooting it in the head with a rifle-bullet when the animal is sporting in the surf; the booming of the surf deadening the report of the rifle,



THE STORY OF THE CIVET.

In parts of India, Africa and the Malay Peninsula I have oftentimes had my patience taxed by the conduct of my dogs in leaving the trail they were following to pursue the trail of a civet. The reason why a dog will follow the trail of a civet in preference to any other is that the civet has a scent gland and leaves a highly perfumed trail. In this respect it is like the fox—only more so.

From this scent gland is extracted the perfume which bears the name of the animal, and which was more highly esteemed a hundred or more years ago than it is now.

Civets have longer faces than domestic cats, and their bodies are also longer, but their legs shorter than in the members of that family. The tail is usually marked with six black rings, which are much wider than the intervening white ones; its tip being black. The Indian civet inhabits the eastern side of India, from Bengal to Sikkim, ascending in the last-named district to a considerable elevation in the Himalaya, and it is also found in Burma, in Siam, in Hainan, and in the south of China. This civet is generally a solitary animal, and it hides in woods, bushes, or thick grass during the day, wandering into open country and often coming about houses at night. Not infrequently it is found in holes, but whether these are dug by it is doubtful. It

is very destructive, killing any birds or small animals it can capture, and often attacking fowls, ducks, etc., but also feeding on snakes, frogs, insects, eggs, and on fruits and some roots. Civets take readily to water.

The palm-civets are only abroad at night and live almost entirely in trees. Their food is in part animal and part vegetable substances.

Of the various families of true palm-civets, five are found in India and Burma. In eight of these the tail is considerably more than half the length of the head and body; and in seven of these it is uniformly-colored. The Celebes palm-civet, forming the eighth of this series, is, however, distinguished by having its tail banded with indistinct rings of darker and lighter brown. The imperfectly-known woolly palm-civet of Thibet differs from



AN AFRICAN AND AN INDIAN CIVET.

all the rest in the woolly nature of its fur, and also by the length of the tail not exceeding that of the head and body.

The best known of all is the Indian palm-civet, found throughout the greater part of India and Ceylon. The general color of the coarse and somewhat ragged fur is a blackish or brownish-gray, without any stripes across the back in fully adult individuals. The length of the head and body of a male measured by me was twenty-two and one-half inches, and that of the tail nineteen and one-half inches; the corresponding dimensions of a female being in one instance twenty and seventeen and one-half inches, while in a second both were about eighteen inches.

This species lives much on trees, especially on the cocoanut palms, and

is often found to have taken up its residence in the thick thatched roofs of native houses. I found a large colony of them established in the rafters of my own house at Calcutta. It is also occasionally found in dry drains, out-houses and other places of shelter. It issues forth at dark, living by prefer-

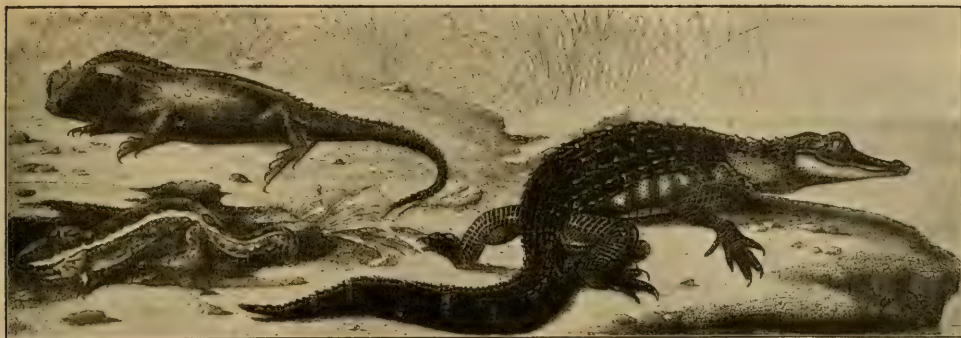


AN AFRICAN CIVET.

ence on animal food, rats, lizards, small birds, poultry, and eggs; but it also freely partakes of vegetable food, fruit, and insects. In confinement it will also eat plantains, boiled rice, bread-and-milk, etc. It is very fond of cock-roaches. Now and then it will commit depredations on some poultry-yard,

and I have often known it taken in traps baited with a pigeon or a chicken. In the south of India it is very often tamed, and becomes quite domestic, and even affectionate in its manners.

One I saw went about quite at large, and late every night used to work itself under the pillow of its owner, roll itself up into a ball, with its tail coiled round its body, and sleep till a late hour in the day. It hunted for rats, shrews, and lizards. Their activity in climbing is very great, and they used to ascend and descend my house at one of the corners in a most surprising manner. This palm-civet is common in Lower Bengal, and in the gardens of the suburban residences of Calcutta may occasionally be seen in the late afternoon or evening crawling among the leaves of a palm previous to starting on its nocturnal wanderings. That it will sometimes take up its quarters in the very heart of the town of Calcutta is proved by an incident which happened to the present writer when employed on the Geological Survey of India. At that time the office of the survey was situated in a street leading down to the Hoogli River, in the old part of the city. On arriving at the office I found my papers on the writing-table marked every morning with the footprints of some mammal. I thereupon set a trap, which caught a large civet the following night.



STORY OF THE CROCODILE.

I shall treat of the crocodile and alligator in the same chapter, since the habits and general characteristics of one are in great measure similar to the other. During my various journeys it has been my unhappy lot to see eight human beings killed, besides a score mangled by these ferocious creatures. I would sooner attack a lion single-handed than be placed in proximity to one of these man-eating reptiles. The blood-curdling scenes which I have witnessed are still fresh in my memory, and I cannot shake off the feeling of horror they frequently bring to me. These creatures have rightfully been termed the lion and tiger of the reptile world.

The crocodile is an inhabitant of the old world, the alligator of the new, and the two animals are best distinguished by the construction of the jaws. In the crocodiles the lower canine teeth fit into a notch in the edge of the upper jaw, and there is in consequence a contraction of the muzzle just behind the nostrils. The lower canine teeth of the alligators fit into a pit in the edge of the upper jaw, and in consequence no contraction is needed. At the back of the throat is a valve completely shutting out water, but leaving the passage to the nostrils free, so that the crocodile can keep his mouth open when beneath the surface, without swallowing the water, or can hold his prey to drown under the water, while he breathes at ease with his nostrils at the surface. There is no true tongue.

The common crocodile inhabits many African rivers, and is, probably, the reptile infesting the Ganges. The Nile, however, is the best known haunt for this terrible creature.

The crocodile feeds on fish, floating carrion, and dogs, or other animals, which it is enabled to surprise as they come to drink at the water's edge, but man frequently falls a victim to its voracity. In revenge for this treatment, all nations persecuted with this pest have devised various methods of killing it. The negroes of some parts of Africa are sufficiently bold and skillful to attack the crocodile in his own element. They fearlessly plunge into the water, and diving beneath the crocodile, plunge the dagger with which they are armed into the creature's belly, which is not protected by the coat of mail that guards the other parts of its body. The usual plan is to lie in wait near the spot where the crocodile is accustomed to repose. This is usually a sand-bank, and the hunter digs a hole in the sand, and, armed with a sharp harpoon, patiently awaits the coming of his expected prey. The crocodile comes to its accustomed spot, and is soon asleep, when it is suddenly roused by the harpoon, which penetrates completely through its scaly covering. The hunter immediately retreats to a canoe, and hauls at the line attached to the harpoon until he drags the crocodile to the surface, when he darts a second harpoon. The struggling animal is soon wearied out, dragged to shore, and dispatched by dividing the spinal cord. In order to prevent the infuriated reptile from biting the cord asunder, it is composed of about thirty small lines, not twisted, but only bound together at intervals of two feet.

When on land it is not difficult to escape the crocodile, as certain projections on the vertebrae of the neck prevent it from turning its head to any great extent.

Human beings have a great dread of this terrible reptile. Many instances are known where men have been surprised near the water's edge, or captured when they have fallen into the river. There is only one way of escape from the jaws of the crocodile, and that is to turn boldly upon the scaly foe, and press the thumbs into his eyes, so as to force him to relax his hold, or relinquish the pursuit.

The Shire River in Africa is very much infested with crocodiles, which at times become very ferocious in their attacks upon the unhappy natives who venture near the banks. This more particularly happens when there is a scarcity of fish in the river, which is the case at flood time, when the fish are driven from their usual haunts. Then it is not safe for any of the natives to show themselves, and to bathe is to court destruction.

I once saw a complete mob of immense crocodiles after one man, who had ventured to bathe, and, of course, for the last time. The reptile which

had secured the unfortunate victim was in his turn attacked by hungry crocodiles, and a fierce fight resulted.

One native, who was smoking at the side of the river, was seized by the hand by a crocodile, and would have been dragged in and devoured had he not very quickly caught hold of a tree which grew upon the bank, and clung with such tenacity that the reptile had to abandon his captive, leaving the deep dent of his jaws on his arm.

In the Upper Nile the favorite haunts of the crocodiles are sandbanks, situated in parts of the river where the current is not too strong. There they may be seen at all hours of the day sleeping with widely opened mouths, in and out of which the black-backed plover walks with the utmost uncon-



GANGES CROCODILE DEVOURING A CHILD.

cern. According to Arab accounts, one and the same crocodile has been known to haunt a single sandbank throughout the term of a man's life; thus leading to the conclusion that these creatures must enjoy a long term of existence, during the whole of which they continue, like other reptiles, to increase in size. In common with this feature of uninterrupted growth, all crocodiles are also distinguished by their remarkable tenacity of life; the shots that prove instantaneously fatal being those that take effect either in the brain itself or in the spinal cord of the neck. It is true, indeed, that a shot through the shoulder will ultimately cause death; but it allows time for the animal to escape into the water, where its body immediately sinks. To

reach the brain, the crocodile should be struck immediately behind the aperture of the ear. Although it is commonly supposed that the bony armor of these reptiles is bullet-proof, this is quite erroneous; if the plates are struck obliquely, the bullet will, however, frequently ricochet.

A remarkable instance of boldness and ferocity displayed by a crocodile of this species was witnessed by me during a journey to Mashonaland. On arriving one evening at the banks of the narrow but rocky Tokwi River, a man named Williams rode in with the intention of crossing. During the passage his horse was carried by the stream a few yards below the landing-place, and just as he reached the opposite bank he was seized by the leg by a crocodile, which dragged him from his horse into the stream. There the reptile let go its hold, upon which the man managed to crawl on to a small island. Immediately his companion rode in to his assistance, upon which another very large crocodile mounted up between him and his horse's neck, and then slipped back, making a dreadful wound on his side and in the horse's neck with its claws as it did so. The river seemed, indeed, to be absolutely swarming with crocodiles; and it was with the greatest difficulty that the unfortunate man, Williams, who ultimately died of his wounds, was brought to bank.

The Ganges crocodile is one of the largest, if not the very largest, of its order, sometimes reaching a length of 35 feet. As its popular name imports, it is a native of India, and swarms in many of the Indian rivers, the Ganges being greatly infested with its presence. It is a striking animal, the extraordinary length of its muzzle giving it a most singular and rather grotesque aspect.

This prolongation of the head varies considerably according to the age and sex of the individual. In the young, just hatched from the egg, the head is short and blunt, and only attains its full development when the creature has reached adult age. The males can be distinguished from the other sex by the shape of the muzzle, which is much smaller at the extremity. There are many teeth, the full complement being about one hundred and twenty. They are similar in appearance, and about equal in length.

The following account of the pursuit of one of these monsters which had recently carried off a boy is abridged from a native newspaper. The hunter, having been summoned, moored his canoe hard by the place where the tragedy had taken place, it being well known that a crocodile which has been successful in securing a victim will generally remain for some days about the spot. Soon the crocodile was descried floating on the water, whereupon

the hunter and assistant hid themselves in the canoe, while the son of the former entered the water, which he commenced to beat with his hands. Catching sight of the boy, the crocodile prepared to dive towards him, upon which the boy took refuge in the canoe. In a moment or so the reptile rose to the surface at the expected spot, where he was saluted with a couple of harpoons, one of which secured a firm hold. After a long chase, in which a number of the inhabitants of the village took part in boats, a second harpoon was safely planted in the head of the monster, who was finally dragged to shore. When opened several gold and silver ornaments—the relics of earlier victims—were found in his stomach.



ALLIGATOR WAITING FOR SOMETHING TO TURN UP.

On the Amazon and Orinoco, as well as other South American rivers, alligators are to be met with in myriads, and appear to be very similar in their habits to the crocodiles of the old world. They grow to a length of eighteen or twenty feet, and attain an enormous bulk. Like the turtles, the alligator has its annual migrations, for it retreats to the interior pools and flooded forests in the dry season. During the months of high water, therefore, scarcely a single individual is to be seen in the main river. In the middle part of the Lower Amazon, where many of the lakes with their channels

of communication with the trunk stream dry up in the fine months, the alligator buries itself in the mud and becomes dormant, sleeping till the rainy season returns. On the Upper Amazon, where the dry season is never excessive, it has not this habit. It is scarcely exaggerating to say that the waters of the Solimoens are as well stocked with large alligators as a ditch in Indiana is in summer with tadpoles. By the natives of these regions the alligator is at once despised and feared. On one occasion I saw a party boldly enter the water and pull to shore one of these large reptiles by its tail; while at another time two medium-sized specimens that had been captured in a net were coolly returned to the water hard by where a couple of children were playing. Sometimes, however, they have to pay dearly for such temerity. The Indians of Guiana capture the alligator by means of a baited hook and line, the former being composed of several pieces of wood, which become fixed in the creature's jaws.

One of the most remarkable things on the Magdalena River is the number of alligators. Their skins, teeth, and bodies even, might, it would seem, be made a source of profit. When the sun is at the zenith, and the denizens of the forest in silence seek the deepest shade—when no song, no noise is heard—the alligator stretches its monstrous length on the sands, and amuses itself by swallowing the swarms of flies. Then a negro, with his lounging gait, will seek the water to bathe. The alligator marks him. Slowly, clumsily, he moves his uncouth form, and, plowing through the sand, seeks his favorite element to secure his prey. If the negro is unarmed, he eludes pursuit; but if he has kept his keen knife, he awaits his foe. The alligator makes a dash at him. The negro dives, turns and comes up where the alligator started. This maneuver repeated over and over wearies the monster; and the negro prepares for the attack. But where strike this creature, whose scales return a rifle-ball? After a series of movements to disconcert the alligator, he remains quiet. Again the alligator rushes at him. The negro dives so as to let the creature pass over his head, and rising, drives his knife under the shoulder, straight to the heart. But he fights on, and, though the water is reddened with blood, he beats savagely till repeated blows complete the work, and the negro swims ashore, leaving the tide to bear away his trophy.

When the alligator is cebado—that is, in the habit of lurking around a hut, the negro resorts to a novel plan. It requires cool energy. He takes a piece of hard wood, about eighteen inches long, and three or four inches thick, well sharpened, with a sort of shoulder where it begins to taper. When he sees the animal at its post, he crawls slowly up to him, and, resting

on his knee and left hand, holds out as a bait his right hand, which grasps the double-pointed stick. The alligator opens its jaws and shuts them violently on the hand; but finding itself caught, makes in all haste for the river. The negro holds on till the alligator, unable to close its mouth, drowns.

On our voyage up the Amazon we halted, from time to time, when we came in sight of a good place for fishing. It was generally the mouth of some branch, or one of the numerous shallows. We had no difficulty in finding the spot, no need even to ask a native. The flocks of snowy herons, ranged like sentries, or the abundance of long alligators about the spot, announced not only this fact, but the intention of their presence there.



CROCODILE ATTACKING A MOUNTED HUNTER.

Although Indian women are sometimes snapped up by these uncouth monsters, the Indian men scarcely heed them, entering the water to fish and bathe, as though there was not the least danger, and as though there were no such thing in the world as the tail or tooth of a jacare.

In fact the danger was on their side. Our stock of alligator meat was just out, and one of the Canichanas asked leave to have some sport and lay in a stock. Of course we always gave permission, as it kept up their spirits, and saved us from a drain on our stock of provisions.

It was curious to watch their proceedings. An Indian, stripping off his bark shirt, creeps slowly through the shallow water toward an alligator with a sling in his left hand and in his right a pole, with a slip-noose at the end of a stout rawhide. Though the alligator sees him coming, it will not attempt either to attack or fly; it lies lazily there, looking steadily with its protruding eyes at the bold hunter, occasionally giving a lazy movement with its powerful tail. It does not seem to notice the noose when actually before its eyes.

The hunter suddenly throws it over the monster's head, and draws it taut with a steady jerk. Then the other Indians, who have been watching, rush on, and with a long, strong pull they all land the creature, struggling to get back, and lashing sand and water with its powerful tail. A few vigorous blows of an ax on the head and tail soon disable it.

It is rather curious that the alligator never seems to rush on its antagonists. A single movement in that direction would scatter them all in a moment. They would drop pole and loop and ax, and run for dear life. The Indians are so expert that accidents from the tail are rare.

They like the flesh, but they begin by cutting out from under the jaws and belly, near the tail, four musk-glands, in pairs, which if left, diffuse their flavor through the whole body. These glands are a valuable article of commerce; and the Indians tie them up carefully and dry them in the sun. Mixed with a little rose-water, the contents of these glands perfume the raven locks of elegant Bolivian ladies at Santa Cruz de la Sierra and Cochabamba, whose nose can stand and enjoy its powerful odor as they do a bull-fight, but who, gracefully as they roll cigaritos and dance their favorite dances, often cannot write their names.



THE STORY OF THE SLOTH.

One of the most singular animals is the South American sloth, a creature which a short time ago was thought to lead a most miserable life, owing to its awkward and painful movements when placed upon the ground. Nature never intended the sloth to live upon the ground at all, but designed it for a life in the trees, for which it is fitted in a very remarkable manner.

The sloth, instead of climbing after the manner of the squirrel or the monkey, passes almost its whole existence beneath the boughs, to which it clings with its long and strongly-curved claws, its back being thus toward the ground. In this singular position the sloth eats, drinks, and sleeps, traveling slowly from tree to tree every now and then, and seeming seldom or never to descend to the ground.

The sloth is gifted with great strength, and its muscles, moreover, possess most wonderful power of endurance, so that although the entire weight of the body is constantly supported by the limbs, they never give way to fatigue.

The life of the sloth is a very uneventful one, for, as it feeds upon the leaves of trees, an abundant supply of food is always within its reach, and it is not, therefore, obliged to search for provisions like most other animals. Then, again, its curious habits place it out of the reach of beasts of prey, and, indeed, almost the only foes which the animal has to fear is the serpents, which, of course, can follow it into its leafy retreat and overcome it without difficulty.

The sense of hearing in these animals seems but imperfectly developed; and their small, dull and reddish eyes do not appear capable of very acute vision. Indeed, on first observing a sloth its eyes look so devoid of brightness as to give the impression that the creature must be blind.

But a single young is produced at a birth. When it first comes into the world the young sloth is fully developed, having the body thickly clothed with hair, and the claws on the toes of the same proportionate length as in the adult. With these claws it clings fast to the long hair of its mother, clasping its arms around her neck.

It is gifted with great tenacity of life, surviving under injuries which would have proved instantly mortal to any other animal. It even surpasses the opossum in endurance.

A friend of mine had a sloth which he kept in his house for some time. The animal usually lived on the back of a chair to which it slung itself by its curved claws. After keeping it for some time, he was desirous of killing it, as its skin was required for the purpose of stuffing, and the death warrant was issued against the sloth. But how to kill it was the difficulty; and its owner, being a naturalist, and, therefore, a merciful man, in spite of popular prejudices on the subject, was much perplexed in his mind. At last he determined on trying the effect of the wourali poison, used by the Indians to give their weapons of war and the chase a more deadly effect. Even a sloth could not resist the wourali. A very small wound was made through the animal's skin, and inoculated with the poison. Soon the sloth began to droop, its head sunk upon one side, and, after a few minutes, one of its feet lost its hold of the chair on which it was hanging. The other foot soon gave way under the influence of the poison, and the dying animal fell to the ground. It lay there perfectly quiet, and, after a few minutes had elapsed, gently closed its eyes, and was dead. Its whole demeanor was that of an animal overcome with sleep, and it never appeared to suffer the slightest pain.

Such, indeed, seems to be the effect of this singular composition upon



SOUTH AMERICAN SLOTHS.

any living creature. If an animal is wounded, although slightly, by a weapon charged with this poison, it runs a few paces, staggers, and lies down as if to sleep, and in a few minutes is dead. The effect is the same upon man. Two Indians were hunting after birds, and one of them had just launched a poisoned arrow at a bird nearly above him. The arrow missed its mark, glanced against a bough, and in its fall struck into the arm of the man who had thrown it. He looked at his arm, took off his quiver of arrows, remarked that he should never use them again, laid himself down, and was dead almost immediately.

No account of the sloth would be complete without some reference to the gigantic ground-sloths which were formerly so abundant in South America, as it is by their aid alone that we are able to comprehend the relationship of the true sloths to the ant-eaters. The best known of these creatures is the megatherium, which rivalled the elephant in bulk. They may be described as possessing the skulls and teeth of sloths, and the backbones, limbs, and tails of ant-eaters. They agreed with the sloths in having large and complete collarbones; but, as I infer from the conformation of the lower jaw, they approximated to the ant-eaters in the elongation of their tongues. The majority of the ground-sloths were South American; but one species of megatherium ranged into North America.



STORY OF THE TORTOISE.

The turtle which inhabits the streams in almost every part of the United States has a counterpart in the tortoise, a creature of such dimensions as to seem almost incredible. I have aided in catching these sea-monsters, some over seven feet long and weighing from 800 to 900 pounds. These specimens were probably over 100 years old, for the tortoise does not attain its full growth until near the end of its natural life. Information which I believe authentic leads me to estimate the possible age to which the tortoise attains as not less than 200 years.

At the fore and hinder extremities of the shell of all tortoises are left large apertures, through which are protruded the head and neck, the fore and hind-limbs, and the tail. A large number of tortoises are able to retract both the head, limbs, and tail within the margins of the shell, the apertures of which are then filled up; such portions of the head and limbs as are exposed being protected by horny shields.

With the exception of the marine leathery turtles and the fresh-water soft-tortoises, in which it is invested merely with a continuous leathery skin, the shell of the various spaces is covered with a number of horny plates, which, in the adult state at least, are in contact with one another by their edges.

The species that generally forms the celebrated New York dishes is

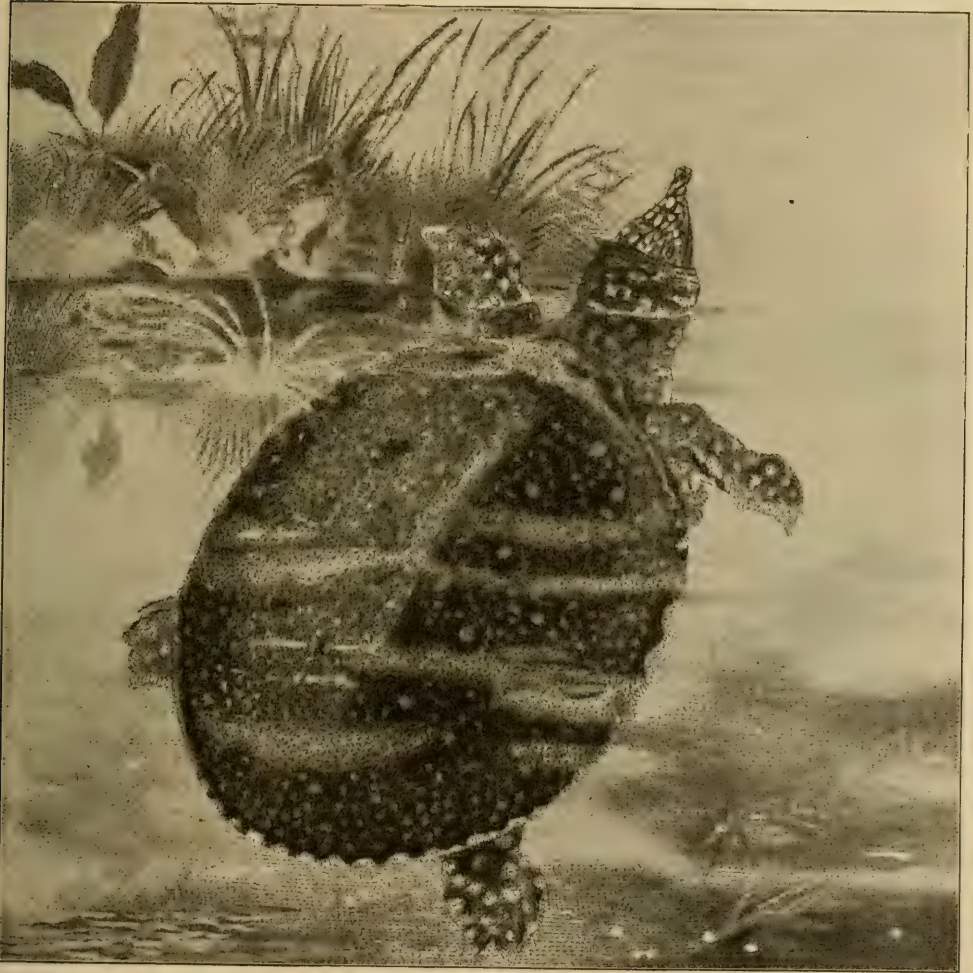
known as terrapin, but other species are also used. The best terrapins go by the name of "diamond-backs," and do not generally exceed some seven inches in length, although they may rarely measure as much as ten inches, but all terrapin of larger dimensions belong to the inferior kinds, ordinarily designated "sliders." Terrapin are caught all the way from Savannah and Charleston to the Patapsco River at Baltimore, but the genuine diamond-back belongs only to the Upper Chesapeake and its tributaries. The majority of the sliders are brought to Baltimore from the James River. The terrapin-catchers make from five to twenty dollars per week, and they find the reptile, or "bird," as the *bon vivant* calls it, by probing the mud in the shallows with sticks. The terrapin is dormant, and when found is easily secured. A four-pound terrapin taken about September 15th will exist prosperously in a dark, cool place, without food or drink, until April 15th, and (the dealers say) will gain two ounces in weight. After that time it gets lively and active, and will take hold of a finger with great effusion and effectiveness. The male terrapin is known as a "bull," and the female as a "cow." The latter is much more highly prized, and generally contains about thirty eggs. No dish of terrapin is thought complete without being garnished with these.

There is a tortoise found in the desert wastes of California and Arizona which has the same power to carry a supply of water as the camel; for, if one of these animals is killed, it is generally found to have quite a store of water in a bag of membrane which is fastened to the inner side of the shell, and which evidently answers exactly the same purpose as the water-cells of the camel's stomach. So large is this supply, that, if a man were dying of thirst in the desert, and could kill one of these tortoises, he would obtain quite enough water to last him for a couple of days at least, and so would save his own life by killing the tortoise, just as many lives have been saved by the death of a camel. If it were not for these cisterns, so to speak, which the tortoise carries in its body, it could never live in the districts in which it is found, for the streams and pools are so far from one another that the slow-moving animal might travel for months, and yet never find a chance of drinking. It is thought that its water-supply is procured from a kind of plant which grows in the desert, and which, when open, is found to have some little quantity of water inside it.

These tortoises are much esteemed as food; and in order to see whether they are sufficiently fat to be killed, the inhabitants are accustomed to make a slit beneath the tail, through which the interior of the body could be seen.

With the usual hardihood of reptiles, the rejected individuals appear to recover completely from this severe operation.

The Matamata is certainly the most remarkable of aspect among all the tortoises, and perhaps may lay claim to be considered one of the oddest-



SOFT SHELL RIVER TORTOISE.

looking animals in the world, far exceeding in its grotesque ungainliness even the wild and weird creations of the Middle Age painters.

This tortoise inhabits South America, and is most plentiful in Cayenne. Formerly it was very common, but on account of the excellence of its flesh,

it has been subjected to such persecution, that its numbers have been considerably diminished. It haunts the lakes and rivers, where it swims well and with some speed. As is the case with most aquatic tortoises, it is carnivorous, and feeds on fish, reptiles, and other creatures, which it captures by a sudden snap of its sharp beak. In general, it appears not to care for chasing its intended prey, but conceals itself among the reeds and herbage of the river-side, and from its hiding-place thrusts out its neck suddenly upon its victims as they pass unsuspectingly within reach of their destroyer. On occasion, however, it will issue from its concealment, dart rapidly through the water and seize a fish, reptile, or even a water-fowl, and then retire with its prey to its former hiding-place.

It is a large and formidable creature, attaining, when adult, to a length of three feet.

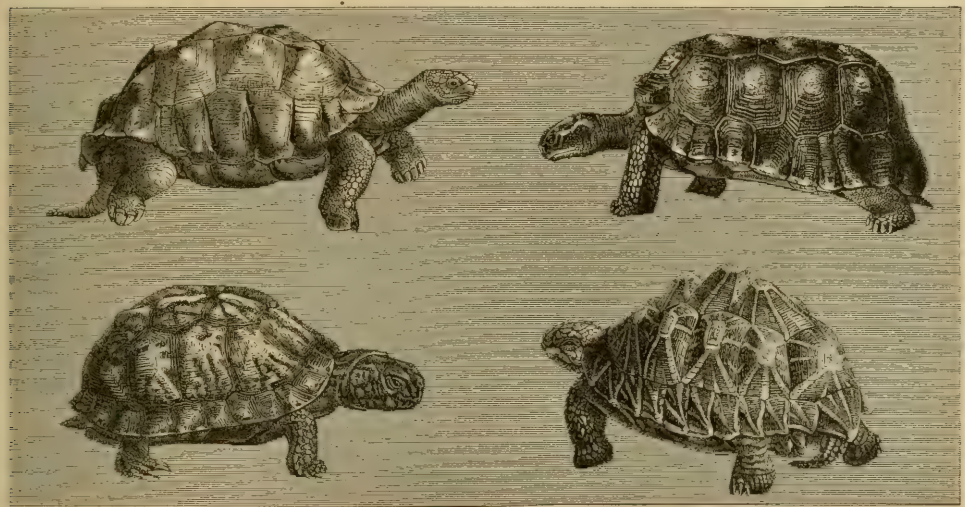
The manner in which the marine tortoises are caught on the coast of Cuba, and at places on the South American continent is of peculiar interest. It is the custom of the sailors in search of the turtle to watch for the female as she goes on shore to deposit her eggs, and in spite of the night and her efforts at concealment, she very seldom escapes. The fishers are particularly successful on moonlight nights, and when the poor creatures are come up with, they are either dispatched with a club or turned quickly on their backs before they have time to defend themselves, or blind their antagonists by throwing sand in their eyes. When very large it requires several men and the use of hand-spikes and levers to turn a turtle over. The marine turtle is so fat and its buckler so flat, that once on its back it cannot recover the use of its feet and escape.

The great Indian tortoise or elephant tortoise inhabits the islands in Mozambique Channel, and is frequently brought to Mauritius. Its entire length is about four feet; the shell, which measures three, is composed of twenty-four scales. This tortoise is very fond of water, drinking large quantities and wallowing in the mud. The larger islands alone produce springs, and these are always situated towards the central parts, and at a considerable elevation. Hence broad and well-beaten paths radiate in every direction from the wells, even down to the seacoast; and the Spaniards, by following these up, first discovered the watering places.

When I landed at Chatham Island, I could not imagine what animal traveled so methodically along the well-beaten tracks. Near the springs it was a curious spectacle to behold many of these great monsters, one set

eagerly traveling onward with outstretched necks, and another set returning, after having drunk their fill.

When the tortoise arrives at the spring, quite regardless of any spectator, he buries his head in the water above his eyes, and greedily swallows great mouthfuls, at the rate of about ten in a minute. The inhabitants say that each animal stays three or four days in the neighborhood of the water, and then returns to the lower country; but they differed respecting the frequency of these visits. Some tortoises live on islands where the only water they obtain is that which falls as rain, and the inhabitants of the Galapagos Islands, when overcome with thirst, are in the habit of killing a tortoise and drinking the water contained in its interior.



ELEPHANT TORTOISE.

CAROLINA BOX TORTOISE.

BRAZILIAN TORTOISE.

ELEGANT TORTOISE.

The tortoises, when purposely moving towards any point, travel by night and day, and arrive at their journey's end much sooner than would be expected. The inhabitants, from observing marked individuals, consider that they travel a distance of about eight miles in two or three days. One large tortoise walked at the rate of sixty yards in ten minutes, that is three hundred and sixty yards in the hour, or four miles a day,—allowing a little time for it to eat on the road. During the breeding-season, when the male and female are together, the male utters a hoarse roar or bellowing, which, it is said, can be heard at a distance of more than a hundred yards. The female never uses

her voice, and the male only at these times; so that when the people hear this noise, they know that the two are together. The female, where the soil is sandy, deposits her eggs together, and covers them up with sand; but where the ground is rocky, she drops them indiscriminately in any hole. The egg is white and spherical; one which I measured was seven and three-eighths inches in circumference, and therefore larger than a hen's egg. The young tortoises, as soon as they are hatched, fall a prey in great numbers to the carrion-feeding buzzard. The old ones seem generally to die from accidents, as from falling down precipices; at least, several of the inhabitants told me that they never found one dead without some evident cause.

The inhabitants believe that these animals are absolutely deaf; certainly they do not hear a person walking close behind them. I was always amused when overtaking one of these great monsters, as it was quietly pacing along, to see how suddenly, the instant I passed, it would draw in its head and legs, and uttering a deep hiss fall to the ground with a heavy sound, as if struck dead. I frequently got on their backs, and then giving a few raps on the hinder part of their shells, they would rise and walk away;—but I found it difficult to keep my balance.

The handsome Brazilian tortoise, which attains a length of nearly twenty-two inches, is an inhabitant of tropical South America, to the east of the Andes, and also of the Windward Islands, ascending to an elevation of about two thousand feet. In many wooded districts it appears to be very abundant, feeding not only on leaves and grasses, but likewise on the fallen fruit which is to be met with in great quantities. In the hot season it constructs a nest of dry leaves, wherein are deposited its eggs, which may be a dozen or two in number. When first hatched, the young are of a uniform yellowish brown color, with their shells still soft. The young, and to a less degree the adults, have numerous enemies, but the greatest are the puma and jaguar. Against the sharp teeth and stout claws of these voracious animals, not even the strong hard shell of the tortoise is a sufficient defense.



THE STORY OF THE OCELOT.

I once spent a very interesting quarter of an hour in South America watching an ocelot catch a monkey. The beautiful cat had taken a position in a large tree much frequented by monkeys. It stretched out at full length upon a big limb and remained perfectly motionless. To all appearances it was dead. Pretty soon the monkeys saw it and immediately began to chatter in a high state of excitement. They seemed undecided whether to run away or to make some sort of an attack upon the apparently lifeless object stretched upon the limb. It was not long, however, before their natural curiosity overcame their fears. They drew nearer, occasionally chattering loudly and then remaining silent for a few moments while they watched the ocelot intently.

The cunning little animal gave no sign of life. The monkeys came still nearer, their curiosity increasing with every step. They were now within a couple of feet of the ocelot, but that animal, with a splendid command of its nerves, never moved a muscle. The monkeys shouted and scolded, but their cries failed to arouse the shamming ocelot. Finally one monkey, more venturesome than its fellows, cautiously stretched out a paw and touched the ocelot on its long tail. Not a movement, not a sound. Assuredly this creature was dead. Again and again the monkey repeated the performance without awakening any sign of life in the ocelot.

Then, as if having satisfied itself that the animal was really dead, the

monkey ran along the limb and squatted close by the ocelot's head. "Squeak!"

It was the death yell of the curious monkey. As if it were made of springs, the ocelot leaped to its feet, and with the movement seized the monkey with its teeth and claws.

The other monkeys ran chattering and screaming through the forest, while the ocelot proceeded leisurely to make its supper of the monkey. Like



OCELOT CATCHING A MONKEY

the jaguar, it first sucks the blood of the animal it kills, and if this does not satisfy its hunger, it feasts rather slowly and daintily on the carcass.

The ocelot devours small quadrupeds of all kinds as well as eggs.

It runs like the fox and wildcat when pursued by hunters and hounds, and often resorts to the fox-like trick of doubling on its track in order to baffle its pursuers.

In South America I saw many of these beautifully-marked animals. Its

range is the same as the jaguar's, and it partakes of the habits of that animal, although the ocelot is a much smaller member of the cat family.

It is a very voracious animal, but at the same time timid. It rarely attacks men. It is afraid of dogs, and when pursued it makes off to the woods and climbs a tree. There it remains, and even takes up its abode to sleep and look out for game and cattle, upon which it darts as soon as they are within range. It prefers the blood to the flesh, and, in consequence, destroys a vast number of animals, for instead of devouring them, it only quenches its thirst by sucking their blood.



THE OCELOT.

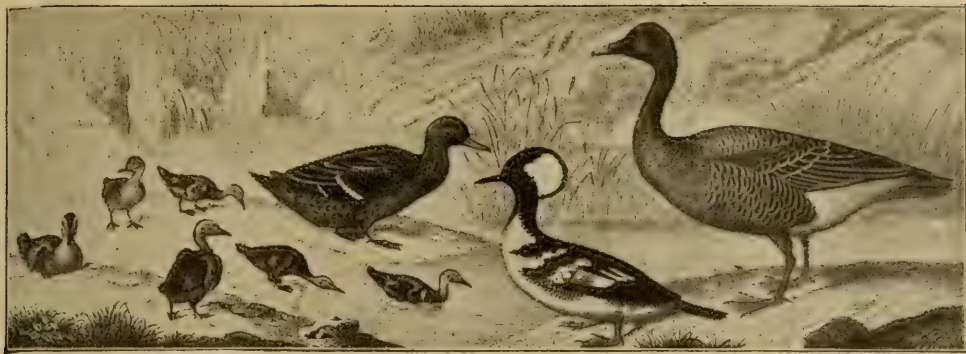
Notwithstanding its cowardice, the ocelot is a very savage animal. A pair of young ones in captivity at the age of three months were sufficiently strong and cruel to kill and devour a dog who had been given them as a nurse. The male always keeps the female in wonderful subjection, so much so, that she is afraid even to attempt to eat until he is completely satisfied.

In the matter of markings, the ocelot is admitted to be the most beautiful member of the cat family. The ground-color of the ocelot may be tawny-

yellow or reddish-gray. It is always marked with black spots, which are in chain-like streaks and blotches. The head and limbs bear small spots, and there are two black stripes over each cheek, and one or two black bands around each fore-leg. The tail is ringed, and parts of the trunk and limbs are whitish.

There is, however, a well-marked variety of a gray color, in which the flanks may be whitish; while there is a second form characterized by its less brilliant color. Still more strikingly different is the third form, characterized by its brilliant coloration. The pupil of the eye, when contracted, forms an exceedingly narrow vertical slit. Not only does the ocelot vary in coloration, but it also displays considerable difference in point of size. Thus the total length of the animal may vary from four feet to three feet one inch, and that of the tail from fifteen to eleven inches.

The ocelot is an exclusively forest animal, and is an expert climber, capturing most of its prey, which consists of small animals and birds, in the trees. In disposition it is fierce and savage in the wild state.



THE STORY OF THE WOLF.

On numerous occasions I have matched my wits against the cunning of a wolf, and have been defeated oftener than I have been successful. I spent more than a month trying to trap an old gray prairie wolf, the leader of a band that was killing the cattle of a ranchman friend. I used the most modern steel wolf-traps and every dainty bait known to hunters and trappers, but all without success. Night after night he uncovered and exposed my traps and continued to slaughter the finest young animals in my friend's herd.

It was not until we had caught his mate in a trap that we were able to catch him off guard. We left the female in the trap by which she had been caught and then planted other traps all around her. The next night the big gray wolf while trying to rescue his mate was caught.

If we exclude some of the breeds of domestic dogs, the wolf is the largest living member of the family; and its reputation for fierceness is well known. It belongs to a group which includes the jackals and the domestic dogs; all the wild species of which are characterized by their powerful teeth and the moderate brush formed by the tail (in which the hair is longer than that of the body). It is found in Europe, Asia and many parts of North America.

Ferocity, craft and cowardice are the well-known traits of the wolf. Although one of the dog tribe, it is held in utter abhorrence by the domes-

ticated dogs. The stronger pursue and destroy it, the weaker fly from it in terror. In the earlier part of English history it is frequently mentioned as a common and dreaded pest. It was finally extirpated in England about 1350, in Scotland about 1600, and was not entirely destroyed in Ireland until the beginning of 1700. It is still found in parts of France, Russia, and the whole of Western Asia.

Wolves inhabit both open country and forests; and although generally



SCENES IN WOLF LIFE.

found in pairs, or solitary, they at times, and more especially in winter, associate in large numbers. They wander abroad both in the daytime and at night. Although usually cowardly, the wolf becomes bolder and more daring, stealing its prey by night, when driven by hunger, or when hunting together. Stories of the attacks of wolves, when in packs, upon travelers in Russia are numerous. In the year 1895 no less than 161 persons fell victims to

these animals in Russia. A pack of these animals, when hungry, will follow mounted travelers or those in sleighs and will boldly attack them even in the face of firearms. When one of the pack is killed or wounded by a shot, the others stop only long enough to devour his body, and then renew the attack.

In the earlier days of American farming, a couple of these marauders have been known to kill fifteen or sixteen sheep in a single night, simply



GRAY WOLF OF WESTERN AMERICA.

tearing open their throats without otherwise damaging the carcasses. When the bison existed in countless thousands on the prairies of North America, wolves were in the habit of prowling around the herds for the purpose of preying on sick or wounded individuals and such calves as strayed from the protection of their elders. Frequently wolves might be seen wandering in

the midst of a herd of bull bison without attracting the least attention. In general almost any kind of prey is acceptable to the wolf, which does not by any means disdain a meal of carrion. The larger mammals, such as cattle, horses, and the bigger kinds of deer, are generally only attacked when several wolves are associated together; but in Canada a single wolf will kill the largest male reindeer. Birds always form an acceptable portion of a wolf's diet. When hard pressed by hunger, wolves will eat almost anything they come across, down to mice and frogs, and, it is said, even buds of trees and lichens.

The lair of the wolf is formed either in a rocky cavern, within the hollow of a fallen trunk, beneath the roots of an overthrown tree, or more rarely in holes in the ground; such burrows being sometimes dug by the animal itself. A dense thicket will also not unfrequently serve as a hiding-place. The ordinary cry of the wolf is a loud and prolonged howl. The amount of noise that a single wolf is capable of producing is simply astonishing; and many amusing episodes of camp lore owe their origin to this fact. More than one lone traveler has hastily taken to a tree, and remained in the inhospitable shelter of its branches for an entire night, believing himself surrounded by a pack of at least fifty fierce and hungry wolves, when in reality there was but one, and (as its tracks afterwards proved) that was on the further side of a lake, a couple of miles away.

The endurance of the wolf's gallop has become proverbial. When pursued by wolves, deer make for the nearest water, in which they have a chance to escape, being able to swim much faster than their enemies. Should the river or lake be narrow, the deer generally swim either up or down, seldom straight across; frequently landing, after a detour, on the same side in which they entered the water. By this means the wolves are puzzled and put off the scent. If there are thick weeds or bush along the shore, the deer frequently sinks his body under water, so that no part will appear above the surface but his head, and by this means is enabled to evade the cunning of his pursuers. The wolf displays remarkable caution in avoiding all kinds of traps set for his destruction; and when he is caught will frequently feign death in the hope of being able to escape.



THE STORY OF THE BADGER.

The badger was formerly so common in Wisconsin that the early inhabitants of that state gave the nickname of "badger state" to the commonwealth. In like manner Michigan has acquired the title of "wolverine state" because the animal called wolverine is an old settler near the great lakes bounding Michigan on three sides. Both these animals belong to the weasel family and possess many traits in common.

The fact that the badger is an inoffensive animal, not interfering with man nor the crops he raises, has not saved him from much ill treatment, until the term, "badgering," has come into use. It expresses irritating treatment accorded an inoffensive person or animal.

Badgers for the most part live on the ground and in burrows. The body is stoutly built, the limbs are short and strong, and armed with large claws. The length is from thirty inches to three feet, and the height at the shoulder some twelve inches. The general color is gray, but the head is white, with a black band on each side. These animals feed on mice, snakes and frogs, insects, fruits, acorns, and roots. They are very fond of wasps' nests. The cruel sport of badger-baiting—now, fortunately, nearly extinct—consisted of putting a badger in a barrel and setting on dogs to pull him out.

The dogs are frequently worsted by the badger, as its bite is terrific, and its skin so tough, and hair so thick, that the bites of the dog do not take full effect.

The power of the badger's bite is caused principally by the manner in which the under jaw is set on. Not only are its teeth sharp, and the leverage of its jaw powerful, but the jaw is so contrived, that when the creature closes its mouth, the jaw locks together as it were, and is held fast without much exertion on the part of the badger.

The European badger is a clumsy animal with a lengthy body and short legs. It lives in the woods, generally, in the densest part of the forest. For its home, it digs a large burrow in the ground and it makes but one entrance



AMERICAN BADGERS.

to that burrow. In the bottom of the burrow it lays grass and hay and has a very comfortable house in which to live. The badger is a skilful digger and for this purpose was given strong, curved claws. The badger can be tamed and is said to show a good deal of affection for its master. Like the wolf, it treads upon its heels, although its walk is similar to that of the bear. It is said they embrace each other and when they gambol and play utter a cry so loud as to startle one.

In this country, in Canada and Northern Europe the badger hibernates.

About the latter part of October or first few weeks in November, the animal sleek and fat, enters its burrow and goes to sleep. It remains there until the warm sun of the spring months wakes it, when it appears, but little the worse for its long seclusion.

The fast of five or six months leaves the animal in better condition than are most of the other hibernating creatures when they issue forth in spring.

It has been very generally asserted that badgers and foxes do not get



POUCHED BADGER OF AUSTRALIA.

on well together, and that the former kill the cubs of the latter. I know of a case where the badgers and the foxes were not unfriendly, and one spring a litter of cubs was brought forth very near the badgers; but their mother removed them after they had grown familiar, as she probably thought they were showing themselves more than was prudent. More than one instance has come to my notice where these two animals have lived amicably together

in the same burrow; in one of these cases a fox having annually given birth to cubs in the badger's den.

Within the deep recesses of its burrow, which often terminates in a fork-like manner, are born the young of the badger; the number in a litter being usually three or four. The young are produced during the summer; and are at first blind, not acquiring the power of sight till the tenth day.

When the badger apprehends danger, in order to afford additional security, the mouth of the burrow is blocked from the inside by its occupant. The burrow is always kept scrupulously clean, and is lined with fern and other vegetable substances. As the winter approaches, the old bedding is replaced by dry fern and grass raked together by the badger's powerful claws. This is often left to wither in little heaps till dry enough for the purpose. Partially concealed, I have watched a badger gathering fern, and using a force in its collection quite surprising.

The fur is of some value, being used for muffs, tippets, robes and trimmings, while the long hairs are employed in the manufacture of brushes. The price of a skin is from a dollar to two dollars.

In Australia where many of the animals like the kangaroo, the wolf, the marten and others are fitted by nature with a bag or pouch in which they carry their young, is found a queer little animal known as the bondicot or long-nosed pouched badger. Little is known of the habits of this animal. Occasional specimens have exceedingly long ears like the one shown in our illustration.

This badger feeds on plants and seeds, and also on insects and worms.

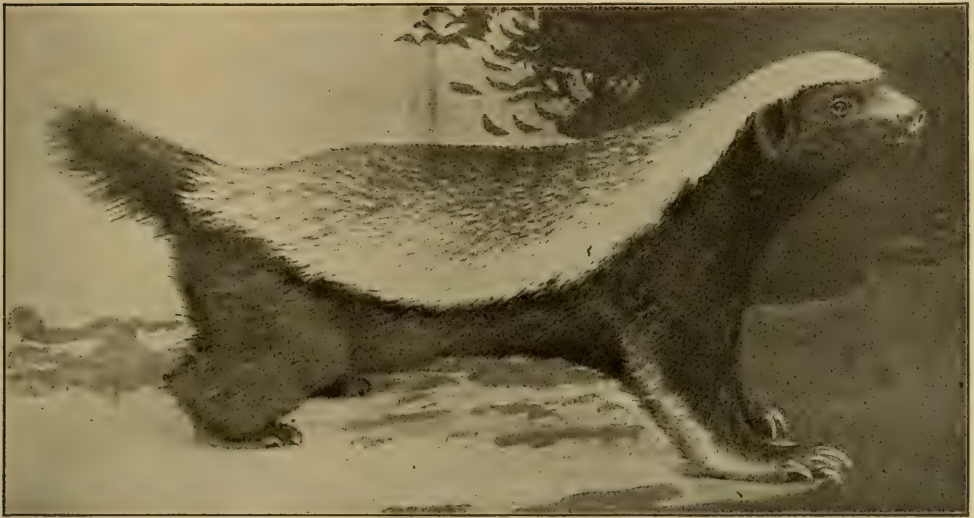
Another peculiar species of badger is found in East Africa. It is called the ratel or honey badger.

It surpasses the skunk in the rapidity with which it burrows, and like that animal emits an offensive odor when irritated or attacked. The face of the honey badger and all the lower parts of its body are black, while the upper parts and the back are gray. It is a skillful bee hunter, although it cannot climb. The bees that make their nests in the deserted burrows of ground animals fall easy victims to the ratel.

The sand-badgers, or, as they are often termed, hog-badgers, are easily distinguished from the other members of the group by their longer tails; that of the Indian species being from a quarter to a third the length of the head and body. The long and naked snout is very like that of the Malayan badger; the eyes are small, and the ears also small and rounded. The body is rather flattened from side to side; and only a portion of the naked soles of the feet

is applied to the ground in walking. The coat consists of a full soft under-fur, mingled with long stiff hairs. In color the Indian sand-badger is dirty grey both above and below, with a more or less marked blackish tinge on the back, most of the individual hairs being dirty white throughout their length, but the longer ones on the back and sides having black tips. The head is white, with black bands, while the lower parts and limbs are dusky, the limbs being sometimes black.

It frequents stony ground or small hills among jungle, and lives in fissures



THE RATEL, OR HONEY BADGER.

of the rocks or holes dug by itself. It is thoroughly nocturnal. In captivity it is dull and uninteresting, feeding on meats, fish, reptiles, or fruits, and it is particularly fond of earth-worms. One individual used to pass the day sleeping in a hole that it had dug, and was very savage if disturbed. When angry it made a loud grunting noise and bit fiercely. It was dull of sight, and its only acute sense appeared to be that of smell. It was in the habit of raising its snout in the air in order to scent any one who approached, much as a pig does. This animal had no disagreeable smell.



THE STORY OF THE HYENA.

In all my associations with hunters, travellers and naturalists, I have never yet been able to find one who would defend the hyena, which by common consent is classed as the most skulking, cowardly, cruel and treacherous of beasts.

The hyena is remarkable for its predatory, ferocious, and withal cowardly habits. There are several hyenas, the striped, the spotted, and the shaggy, rough-coated, but the habits of all are very similar. The hyenas, although very repulsive in appearance, are yet very useful, as they prowl in search of dead animals, especially of the larger kinds, and will devour them even when putrid, so that they act the same part among beasts that the vultures do among birds, and are equally uninviting in aspect. They not unfrequently dig up recently interred corpses, and in Abyssinia they even flock in numbers into the village streets, where they prey on slaughtered men who are thrown out unburied. One of these animals attacked the explorer Bruce in his tent, and was only destroyed after a severe battle. Their jaws and teeth are exceedingly powerful, as they can crush the thigh-bone of an ox with apparently little effort; and so great is the strain upon the bones by the exertions of these muscles, that the vertebræ of the neck become united together, and the animal has a perpetual stiff neck in consequence.

In Syria and Palestine the favorite haunts of the striped hyena are the

rock-cut tombs so common in these countries; but in India it is more commonly found in holes and caves in rocks. I have more than once turned one out of a sugar-cane field when looking for jackals, and it very commonly lurks among ruins; but in general its den is in a hole dug by itself on the side of a hill or ravine, or a cave in a rock. The call of the hyena is a very disagreeable, unearthly cry, and dogs are often tempted out by it when near, and fall a victim to the stealthy marauder. On one occasion a small dog belonging to an officer was taken off by a hyena very early in the morning.



SPOTTED HYENA.

The den of this beast was known to be not far off in some sandstone cliffs, and some sepoy of the detachment went after it, entered the cave, killed the hyena, and recovered the dog alive, with but little damage done to it. A hyena, though it does not appear to move very fast, gets over rough ground in a wonderful manner, and it takes a good long run to overtake it on horseback, unless in most favorable ground. A stray hyena is now and then met with by a party of sportsmen, followed and speared; but sometimes not till after a run

of three or four miles, if the ground is broken by ravines. It is a cowardly animal, and shows but little fight when brought to bay. The young are very tamable, and show great signs of attachment to their owner, in spite of all that has been written about the untamable ferocity of the hyena.

The striped hyena's food is mainly carrion or carcasses killed by other animals; and in inhabited districts the animal is much dreaded on account of its grave-robbing propensities. Portions of such carcasses as it finds are eaten on the spot, while other parts are dragged off to its den, the situation of which is generally indicated by the fragments of bones around the entrance. These hyenas will also feast on skeletons that have been picked down to the bone by jackals and vultures; the bone-cracking power of the hyena's jaws rendering such relics acceptable, if not favorite, food.

The striped hyena—probably on account of its “body-snatching” propensities—is cordially detested by the natives of all the countries it inhabits. When a hyena is killed, the body is treated in many parts of India with every mark of indignity, and finally burnt. On one occasion in the Punjab, I came across a party of natives cruelly ill-treating a nearly full-grown hyena, which had been rendered helpless by its jaws being muzzled and its feet broken. I soon ended the sufferings of the poor brute by a bullet.

Although, owing to their nocturnal habits, hyenas are seldom seen, yet in some parts of India, from the multitude of their tracks, they must be very common.

The African spotted hyena is much larger and more powerful than the striped species. It inhabits the greater part of Africa at the present day. Formerly the geographical range of this hyena was far more extensive than it is at present, as is proved by the vast quantities of its remains found in the caves of various parts of Europe, from Gibraltar in the south to Yorkshire in the north. It was formerly considered, indeed, that the so-called “cave-hyena” indicated a distinct species from the living one; but zoologists are now generally in accord in regarding the two as specifically identical, although the fossil European hyenas were generally of larger dimensions than the existing African form.



THE STORY OF THE LLAMA.

When Pizarro and his Spaniards conquered Peru they found a beast of burden in use by the Peruvians, and along with the other booty gained they acquired this animal, which is called the llama. The tons of gold and silver sent to Spain were all transported from the mountain recesses to the coast on the backs of the llama.

Only the males were used as beasts of burden, while the smaller females were kept for their milk and flesh. In traveling along the roads the droves marched in single file, under the guidance of a leader; and such a line would traverse the highest passes of the Cordillera, and skirt the most stupendous precipices with perfect safety. When not in active use, the herds of llamas were kept on the higher mountain pastures, where they would often temporarily associate with wild guanacos. The Spanish conquerors of Peru spoke of llama flesh as being fully equal to the best mutton, and they established in the towns shops for its regular sale. At the period of the conquest it is estimated that upwards of three hundred thousand llamas were employed in the transport of the product of the mines of Potosi alone.

The llama can conveniently carry from 100 to 125 pounds, but should the load put upon it exceed its strength, it lies down, and shows itself inflexible to force or persuasion until it is removed or lightened. Its usefulness

in the silver mining districts cannot be overestimated, for it can carry the metal from the mines in places of such abrupt descent that neither mules nor asses can keep their footing.

These animals are comparatively small and possess no hump, so that they may easily be distinguished from the camels. Their hair is very woolly, and their countenance has a very sheep-like expression. A full-haired llama instantly reminds the spectator of a long-legged, long-necked sheep. The feet of the llamas are very different from those of the camels, as



A LLAMA.

their haunts are always found to be upon rocky ground, and must of necessity be accommodated to the ground on which they are accustomed to tread. The toes of the llama are completely divided, and are each furnished with a rough cushion beneath, and a strong claw-like hoof above, so that the member may take a firm hold of rocky or uneven ground.

A flock of llamas journeying across the table lands is a beautiful sight. They proceed at a slow and measured pace, gazing eagerly in every direc-

tion. When scared by any unusual object, the flock separates and scatters all round about, so that the arrieros, as the caretakers are called, have no little difficulty in reassembling it. The Indians are very fond of these animals. They adorn them by tying bows of ribbon to their ears, and hanging bells around their necks; and before loading they always fondle and caress them affectionately. If, in the course of the journey, a llama grows fatigued and lies down, the arriero kneels beside it and addresses it with the



A WHITE ALPACA.

most coaxing and endearing expressions. But, in spite of all the care and attention bestowed upon them, many llamas perish on every journey to the coast, being unable to endure a warm climate.

When resting they give utterance to a curious humming sound, which, when heard at a distance, and proceeding from a numerous flock, resembles a concert of Aeolian harps.

When wild they are very timid, and fly from a pursuer the moment that they see him, but their curiosity is so great that the hunter often secures them by lying on the ground and throwing his legs and arms about. The llamas come to see what the extraordinary animal can be, and give the hunter an opportunity of firing several shots, which the astonished animals consider as part of the performance.

The llamas, like the camels, have a series of cells in the stomach for containing water, and can go for several days without requiring to drink.

Llamas produce only one offspring at a time, so that their rate of increase is not very rapid.

It is from the wild animals known as guanacos and vicunias that the llama and white alpaca are descended.

The range of the guanaco is very wide, extending from the lofty mountains of Ecuador and Peru, where it is found in company with the vicunia, to the plains of Patagonia and the islands of Tierra-del-Fuego.

In the mountains the habits of the guanaco appear to be very similar to those of the vicunia, but it is not unfrequently seen in larger flocks, which may occasionally reach as many as one hundred or even five hundred head. These animals are very wild and wary, and frequently the first evidence of their presence in the neighborhood of the hunter is their loud, neighing alarm-cry, which makes itself heard at a great distance. If the hunter looks attentively he will then probably see the herd standing in a line on the side of some distant hill. On approaching nearer, a few more squeals are given, and off they set at an apparently slow but really quick canter, along some narrow beaten track to a neighboring hill. If, however, by chance he abruptly meets a single animal, or several together, they will generally stand motionless and intently gaze at him, then perhaps move on a few yards, turn round, and look again. They are easily domesticated, and in the wild state have no notion of defending themselves. Guanacos take readily to the water; several times at Port Valdes they were seen swimming from island to island. Byron, in his voyage, says he saw them drinking salt-water. Some of our men likewise saw a herd apparently drinking the briny fluid from a salina near Cape Blanco.

The white alpaca has for ages furnished the aborigines of Peru with the material for their blankets and ponchos. The wool of the alpaca is to-day the only thoroughly satisfactory material for producing the fine luster in expensive fancy fabrics. On this account the alpaca has retained its place as a useful domestic animal, in spite of having lost its prestige in some degree by the importation of European species into Peru.



STORY OF THE CARPINCHO.

This animal is generally known as the water-hog, and is found in the large rivers of South America. It is now almost extinct, a few specimens being still to be found near the head waters of the Amazon. It attains a length of five feet, and often weighs over 100 pounds.

This animal is thoroughly aquatic in its habits, frequenting the margins of lakes and rivers, and swimming and diving with great speed. I saw several at the islands in the mouth of the Plata, where the water is quite salt, but they are more abundant on the borders of fresh-water lakes and rivers. Near Maldonado three or four generally live together. In the day-time they either lie among the aquatic plants, or openly feed on the turf plain. When viewed at a distance, from their manner of walking, as well as from the color, they resemble pigs; but when seated on their haunches, and attentively watching any object with one eye, they resume the appearance of their relatives, the cavies. These animals were very tame; by cautiously walking, I approached within three yards of four old ones. This tameness may probably be accounted for by the jaguar having been banished for some years, and by the gaucho not thinking it worth his while to hunt them. As I approached nearer and nearer, they frequently made their peculiar noise, which is a low, abrupt grunt, not having much actual sound, but rather arising from the sudden expulsion of the air; the only noise I know at all like it is the first hoarse bark of a large dog. Having watched

the four, from almost within arm's length for several minutes, they rushed into the water at full gallop, with the greatest impetuosity, and emitted at the same time their bark. After diving a short distance, they came again to the surface, but only just showed the upper parts of their heads.

In other places the carpincho occurs in larger herds, which may comprise twenty or more individuals. The usual pace of the animal is a long trot, of no great swiftness; but when pressed it will advance in a series of leaps. It has no regular lair, although the herd generally returns to the



THE CARPINCHO OR WATER HOG.

same part of the river bank. The general food consists of water plants and the bark of young trees, but in the neighborhood of cultivated lands carpinchos will consume large quantities of watermelons, maize, rice and sugarcane. In disposition these animals are quiet and peaceful, not to say stupid, and they never appear to indulge in sportive gambols. They occupy their time either in feeding or in reposing in a listless manner on the banks of the rivers or lakes they frequent. When thus reposing, one individual will from time to time raise its head to see if any foe be approaching, and if an alarm arise they soon plunge headlong into the water.



STORY OF THE ANT-EATER.

As its name imports, the ant-eater lives principally upon ants and termites, or white-ants, as they are called, which it takes by thrusting its long, slender tongue among the ants, which adhere to it by a gummy saliva. When the tongue is covered it is rapidly retracted, and the ants swallowed.

Its short legs and long claws would lead an observer to suppose that its pace was slow and constrained; but, when chased, it runs off with a peculiar trot, and with such rapidity that it keeps a horse to its speed to overtake it.

The tongue of this animal looks exactly like a great red worm, and, when the creature is engaged in devouring its food, the rapid coiling and twisting of the tongue add in no small degree to the resemblance.

The claws are very long and curved, and, as they are used in tearing down the habitation of the termites, are exceedingly strong. They are placed on the foot in such a manner that, when the animal is walking, its weight rests on the outside of the fore-feet and the outer edge of the claws, which make a great clattering if the ant-eater is walking upon a hard surface.

When it sleeps it lies on one side, rolls itself up, so that its snout rests on its breast, places all its feet together, and covers itself with its bushy tail. The fur of the animal at all times resembles hay, and, when it is thus curled up in sleep, it is so exactly like a bundle of hay, that any one might pass it carelessly, imagining it to be nothing but a loose heap of that substance.

A tame ant-eater once in my possession by no means restricted itself to ants,

but devoured meat, when minced, with much avidity. The ordinary length of this animal is about four feet and its height about three feet.

Although distributed over the whole of the tropical portions of South and Central America, the great ant-eater is nowhere common; and from its habits of only being abroad at night is but seldom seen. It frequents either the low, wet lands bordering the rivers, or swampy forests; and is strictly a ground animal in its habits. Its strong claws might lead to the supposition that the creature was a burrower, but this is not the case. It has, however, usually a regular lair, or at least a regular place of resort, generally situated among tall grass, where it spends the day in slumber, lying on one side, with its head buried in the long fur of the chest, the legs folded together, and the huge tail curled round the exposed side of the body. Except in the case of females with young, the ant-eater is, as a rule, a solitary creature. Its usual pace is a kind of trot, but when pursued it breaks into an awkward, shuffling, slow gallop. The food of the great ant-eater consists exclusively of ants, together with their larvæ. In order to obtain these insects, the ant-eater tears open their nests or hillocks with the powerful claws of its fore-feet. As soon as the light of day is let into their domicile, the ants rush to the surface in order to investigate the cause of the disturbance, and are forthwith swept up by hundreds, adhering to the sticky tongue of the ant-eater, which is protruded and withdrawn with lightning-like rapidity.

The lesser ant-eater is an animal of scarcely half the size of the greater ant-eater, with a shorter head and longer ears.

The tamandua, which is the Portuguese term for the creature, the native name being *caguari*, ranges through the tropical forests of South and Central America. It mainly lives in trees, its climbing powers being largely aided by the prehensile tail. It may be sometimes seen abroad during the day. Its movements are more rapid than those of the great ant-eater; and when asleep it lies on its belly, with the head bent under the chest and covered with the fore-feet, while the tail is curled along the side. Its food apparently consists mainly of ants—probably belonging to tree species—but it has been suggested that honey may likewise form a portion of its diet. Like the great ant-eater, it produces only a single young one at a birth.

The third and last representative of the family is no larger than a rat. The length of the head and body is only six inches, and that of the highly prehensile tail a little over seven inches. The fore-feet have four toes, of which those corresponding to the index and third fingers of man alone have claws; the claw of the third toe being very much larger than that of the

second. In the hind-feet there are four nearly equal-sized toes, which are placed close together so as to form a hook-like organ somewhat after the fashion of the foot of a sloth. The fur is soft, thick and silky; its color being generally foxy red above and gray beneath, with the individual hairs grayish brown or black at the base, and yellowish brown at the tips. The skull differs from that of the other ant-eaters by its shorter muzzle. The lower jaw is less widely removed from the ordinary type. Another peculiarity in the skeleton is the presence of well-developed collar-bones.



THE GREAT ANT-EATER.

THE ANT-BEAR.
THE LESSER ANT-EATER.

The two-toed ant-eater is an exclusively tree inhabiting animal. It inhabits Northern Brazil, Guiana and Peru, between the tenth parallel of south and the sixth parallel of north latitude, and it also extends into Central America; its range thus including the very hottest portions of the continent. In the mountains it ascends to an elevation of some two thousand feet above the sea. It is either a rare creature, or one but seldom seen, even by the natives; frequenting the thickest portions of the forests, and escaping observation through its habits and small size. Like its larger relatives, it leads,

except during the pairing-season, a solitary existence; and it is likewise nocturnal, sleeping during the day among the boughs. Its movements are generally slow and deliberate; but when so disposed, it can climb quickly, always with the aid of the tail. Ants, termites, bees, wasps and their larvæ are its food. When it has captured a large insect, it sits up on its haunches like a squirrel, and conveys the prey to its mouth with its paws. I had one of these ant-eaters brought to me which had been captured while slumbering in a hollow tree. I kept it in the house for twenty-four hours, where it remained nearly all the time without motion, except when irritated, in which case it reared itself on its hind-legs from the back of a chair, to which it clung, and clawed out with its fore-paws like a cat. Its manner of clinging with its claws, and the sluggishness of its motions, gave it a great resemblance to a sloth. It uttered no sound, and remained all night on the spot where I had placed it in the morning. The next day I put it on a tree in the open air, and at night it escaped.

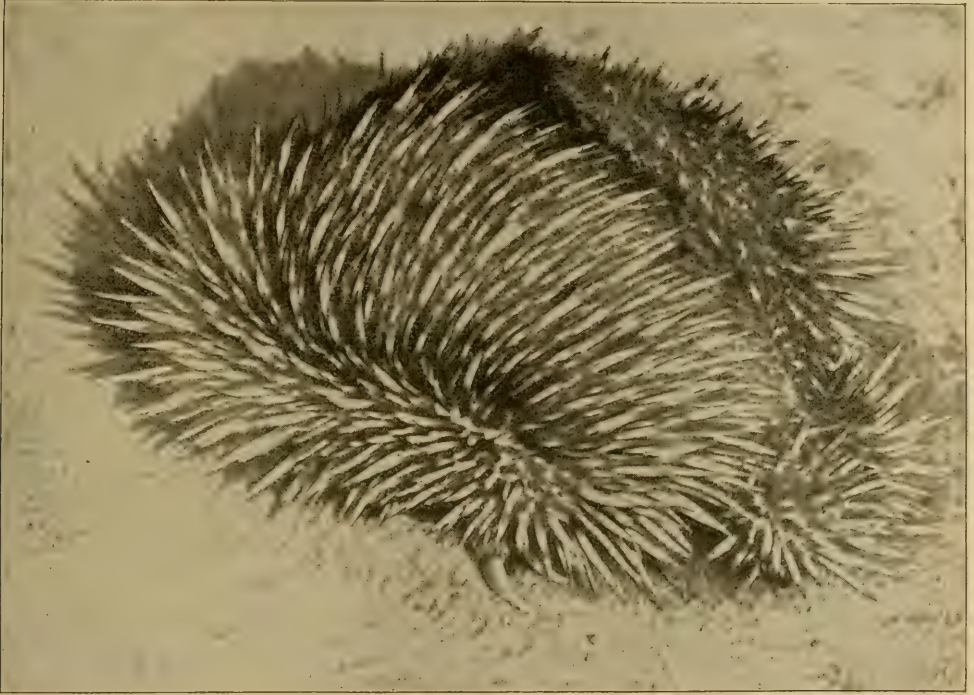
Usually the ant-eater is a harmless, inoffensive creature, which may be driven in almost any direction so long as it is not pressed too hard. If, however, driven to close quarters, it turns furiously on its assailants, whom it attacks by hugging with its immensely muscular arms. It has been asserted, on the authority of the natives, that the ant-eater will even face and attack the jaguar; and although the truth of this statement was denied by the traveler Azara, a later explorer believes that it may be founded on fact. Like the sloths, ant-eaters are exceedingly difficult to kill, their skin being so tough that an ordinary small hunting-knife will make no impression on it, while their skulls may be battered with a heavy stone without producing any other effect than temporarily stunning the creatures.

The porcupine ant-eater is found in several parts of Australia, where it is popularly called the hedgehog, on account of the hedgehog-like spines with which the body is so thickly covered, and its custom of rolling itself up when alarmed. A number of coarse hairs are intermingled with the spines, and the head is devoid of these weapons. The head is strangely lengthened, in a manner somewhat similar to that of the ant-eater, and there are no teeth of any kind in the jaws.

The food consists of ants and other insects, which it gathers into its mouth by means of the long extensile tongue. It is a burrowing animal, and is therefore furnished with limbs and claws of proportionate strength. Indeed, one who kept one of these animals for some time, considers it as the strongest quadruped in existence in proportion to its size. On moderately soft ground

it can hardly be captured, for it gathers all its legs under its body, and employs its digging claws with such extraordinary vigor that it sinks in the ground as if by magic. It is tolerably widely spread over the sandy wastes of Australia, but has not been seen in the more northern portions of that country.

The ant-eaters, or, as they are often called, ant-bears, differ so widely



THE PORCUPINE ANT-EATER ROLLED UP.

in appearance and structure from the sloths that it is difficult to believe at first sight in their close relationship; indeed, had it not been for the fortunate preservation of the remains of the ground-sloths, it may be questioned whether even zoologists would have fully understood the alliance of the two.



THE STORY OF THE OSTRICH.

Ostrich farming has become an important industry in several parts of Africa and Asia, and has been introduced recently into the United States and is successfully carried on in Arizona and California. I have frequently had opportunities to study the habits of this bird at these farms. None of the characteristics of the ostrich is as unique as the manner of hiding from a foe adopted by the foolish bird. As it lives chiefly in desert-like districts where the soil is sandy, it experiences little difficulty in burying its head, and this subterfuge is always adopted when flight is not possible. I have often seen a recently captured ostrich watch the approach of a man, and after seeking to escape, it simply dropped to its knees and dug its head into the sand until its eyes were covered. This attitude it would maintain for half an hour, when, looking up and the man being out of sight, it would resume its gambols or feeding. But when flight is possible, it escapes danger by running. Since it cannot run in a straight line, a man on horseback can readily secure it by intercepting its course, instead of riding after it. Its speed is greater than that of the fastest horse.

I have seen a number of large ostriches, one of which measured 4 feet 10 inches in height at the back, and had a total length of 4 feet 3 inches. Ordinary examples reach only about 3 feet 8 inches in height.

The digestion of an ostrich is proverbial, and while in their general diet these birds will eat all kinds of food, they are likewise in the habit of swallow-

ing stones, sand, bones, or even pieces of metal, to aid in digestion. In captivity this habit probably becomes abnormally developed; and I know of instances where even the constitution of an ostrich could not resist the effects of some of the substances swallowed. Among the ordinary food of the ostrich are comprised many small animals, birds, snakes, lizards and insects, as well as grass, leaves, fruits, berries and seeds.

I knew of one that swallowed some broken bits of glass and died in



A MALE OSTRICH.

great agony. It was a female. So devoted was the male that he pined, and died of grief.

The ostrich is chiefly valuable for its plumage, and the Arabians have reduced the chase of it to a kind of science. They hunt it on horseback, and begin their pursuit by a gentle gallop; for, should they at the outset use the least rashness, the matchless speed of the game would immediately carry it out of their sight, and in a very short time beyond their reach. But when they proceed gradually, it makes no particular effort to escape. It does

not go in a direct line, but runs either in a large circle or first to one side and then to the other; this its pursuers take advantage of, and, by rushing directly onward, save much ground. In a few days, at most, the strength of the animal is exhausted, and it then either turns on the hunters and fights with the fury of despair, or hides its head, and tamely receives its fate.

I can attest to the development of the maternal instinct, which many naturalists deny. I once fell in with a troop of about twelve young ostriches



HOW SOUTH AMERICAN OSTRICHES ARE HUNTED.

which were not much larger than guinea-fowls. I was amused to see the mother endeavor to lead us away, exactly like a wild duck, spreading out and drooping her wings, and throwing herself down on the ground before us as if wounded, while the cock bird cunningly led the brood away in an opposite direction.

The ostrich egg will weigh on the average about three pounds, being equal to two dozen ordinary fowl's eggs; yet one of them is not thought too



AFRICAN OSTRICHES.

much for a single man to eat at a meal, and in one instance two men finished five in the course of an afternoon. The approved method of dressing ostrich eggs is to set the egg upright on the fire, break a round hole at the top, squeeze a forked stick into the aperture, leaving the stem protruding, and then to twist the stick rapidly between the hands so as to beat up the contents of the egg while it is being cooked. Within each egg there are generally some little smooth bean-shaped stones, which are composed of the same substance that forms the shell.

In South America the place of the ostriches is taken by an allied group of birds known as rheas, or, as they are often termed, American ostriches. The wings are proportionately longer, and are covered with long, slender plumes. The best known, and at the same time the most abundant, of the three species by which the single genus is now represented, is the common rhea, inhabiting the pampas of Argentina and Patagonia. This species is far inferior in size to the ostrich, but it is the largest of the three. It is generally seen in pairs, though it sometimes associates together in flocks of twenty or thirty in number. Like all the members of this group, it is swift-footed and wary, but possesses so little presence of mind that it becomes confused when threatened with danger, runs aimlessly first in one direction, and then in another, thus giving time for the hunter to come up and shoot it, or bring it to the ground with his "bolas"—a terrible weapon, consisting of a cord with a heavy ball at each end, which is flung at the bird and winds its coils around its neck and legs, so as to entangle it and bring it to the ground.

Although now confined to Africa, Syria, Arabia and Mesopotamia—and becoming every year scarcer in the three last-mentioned countries—there is a probability that ostriches formerly existed within the historic period, in parts of Central Asia and possibly in Baluchistan, since there are several allusions to birds which can scarcely be anything else than ostriches in various ancient writings. Quite apart, however, from this, the evidence of its fossilized remains shows that an extinct species of ostrich, nearly allied to the existing kind, once inhabited North-Western India, and a petrified egg from the Province of Cherson in Russia, points to the former existence of these birds in that country. Originally it is probable that the ostrich ranged in suitable localities from Senegambia in the west, through Southern Morocco, Algeria and Egypt, to Arabia, Syria and Mesopotamia in the east; while in the other direction it extended from Algeria through Central and Eastern Africa,



THE STORY OF THE LIZARD.

In this country there are many harmless species of lizard, but in the Rocky Mountain region are found some that are exceedingly poisonous. The desert lizard, which ranges from Central America to Arizona and New Mexico, is the only one that has a deadly sting. The fairy-like teeth have grooves for the transmission of the fluid similar to the cobra.

The lizards are usually active, bright-eyed little creatures, delighting to bask in the sun, near some safe retreat, to which they dart with astonishing celerity upon the slightest alarm. Two species of lizards are found in the eastern and central states—the common lizard and the sand lizard. The latter animal is considerably larger than the common lizard, as it sometimes measures a foot in length. It frequents sandy heaths, and in the sand its eggs are deposited, fourteen or fifteen in number. The eggs are hatched by the heat of the sun, and the young immediately lead an independent life. During the winter this as well as the common lizard hibernates in a burrow usually made under the roots of a tree, nor does it again make its appearance until the spring.

The common lizard is only six inches in length. It is more active than the sand lizard, disappearing like magic on being alarmed. When seized, its tail frequently snaps off like grass.

The heart in man and the higher animals is divided into a double set of compartments, technically termed auricles and ventricles, each set having no

direct communication with the other. In the reptiles, however, this structure is considerably modified, the arterial and venous blood finding a communication either within or just outside the two ventricles, so that the blood is never so perfectly aerated as in the higher animals. The blood is consequently much colder than in the creatures where the oxygen obtains a freer access to its particles.

In consequence of this organization the whole character of the reptiles is widely different from that of the higher animals. Dull sluggishness seems to be the general character of a reptile, for though there are some species which whisk about with lightning speed, and others, especially the larger lizards, can be lashed into a state of terrific frenzy by love, rage or hunger, their ordinary movements are inert, their gestures express no feeling, and their eyes, though bright, are stony, cold and passionless. Their mode of feeding accords with the general habits of their bodies, and the process of digestion is peculiarly slow.

The most peculiar feature of the lizard is the facility with which it is enabled to reproduce lost parts, and more especially the tail. In many lizards, when handled, the tail breaks off without any rough usage, and in all or nearly all it will readily come in two if pulled when the creature is seeking to escape. Such missing portion of the tail is speedily reproduced, and whereas the scaling of the reproduced portion is like the original, in certain other forms this is by no means always the case.

The water monitor is a native of those parts of Africa through which the Nile, its favorite river, flows.

The natives have a curious idea that it is hatched from crocodile's eggs that have been laid on hot elevated spots, and that in process of time it becomes a crocodile. It is almost always found in the water, though it sometimes makes excursions on land in search of prey. To the natives it is a most useful creature, being one of the appointed means for keeping the numbers of the crocodile within due bounds. It not only searches on land for the eggs of the crocodile, and thus destroys great numbers before they are hatched, but chases the young in the water, and devours them unless they can take refuge under the adult of their own species, which the monitor will not dare attack.

When full grown, the water monitor attains a length of five or six feet. The color of this species is olive-gray above, with blackish mottlings. The head is gray, and, in the young animal, is marked with concentric rows of white spots. Upon the back of the neck is a series of whitish yellow bands, of



THE BLACK IGUANA IN A BANANA TREE.

a horse-shoe, or semi-lunar shape, set crosswise, which, together with the equal-sized scales over the eyes, serve as marks which readily distinguish it from many other species. The under parts are gray, with cross bands of black, and marked with white spots when young.

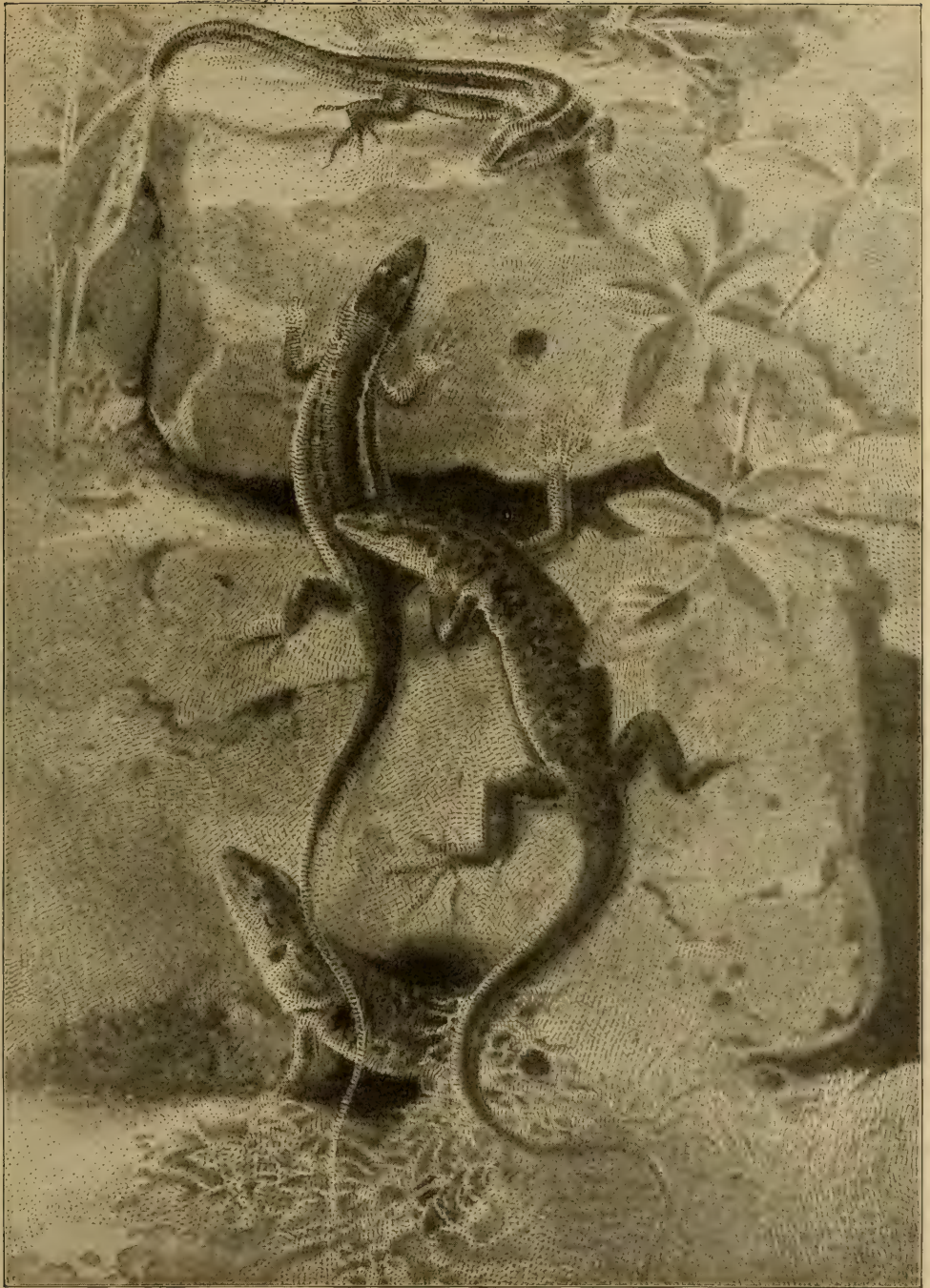
The lizards commonly known as flying dragons are elegant and harmless little creatures to whom such a title seems inappropriate, and therefore I prefer to substitute the name of flying lizards. These flying lizards, which are represented by twenty-one species, ranging over the greater part of the



WATER MONITORS ROBBING A NEST.

Oriental region, are at once distinguished from all their kindred by the depressed body being provided with a large wing-like membranous expansion, capable of being folded up like a fan. The throat is furnished with a large membranous expansion, on the sides of which are a smaller pair; and the tail is long and whip-like. The best known of the species is the Malay flying lizard.

The flying lizards generally frequent the crown of trees, and as they are comparatively scarce, and seldom descend to the ground, they are but



GREEN WALL LIZARDS.

rarely seen. As the lizard lies in shade along the trunk of a tree, its colors at a distance appear like a mixture of brown and gray, and render it scarcely distinguishable from the bark. There it remains with no sign of life, except the restless eyes, watching passing insects, which, suddenly expanding its wings, it seizes with a sometimes considerable, unerring leap. The lizard itself appears to possess no power of changing its colors. When excited, the appendages on the throat are expanded or erected; and the ordinary movements of the creature take the form of a series of leaps.

There is an Australian species commonly known as the moloch, but termed by the settlers the spiny lizard or thorny devil, which seems of peculiar interest to me. This differs from all the other members of the family in being covered with large conical spines. About eight inches in total length, this extraordinary lizard has a small head, with an extremely short snout, on the summit of which are pierced the nostrils. On each side of the head immediately above the small eye is a large horn curving outwards and backwards, while there is a smaller conical spine above the nostril, a second behind the horn over the eye, a third and larger one in front of each ear, as well as one on each side. On the back the spines form ten or more series, of which the outermost are the largest.

Inhabiting Southern and Western Australia, and being not uncommon in several localities in the neighborhood of Port Augusta, the moloch is found only in districts where the soil is dry and sandy. Occasionally two or three may be observed basking in company on the top of a sandhill; and it is the frequent habit of this lizard to bury itself in the sand to a small depth below the surface. Although generally very slow in its movements, it has been known, when disturbed, to make for a neighboring hole with considerable speed.



STORY OF THE KANGAROO.

In the summer of the year 1770, when Captain Cook was refitting his vessel at the mouth of the Endeavour River in New South Wales, a party of his crew who had landed to procure food brought back reports of a strange animal of large size, which sat upright on its hind-limbs and tail, and progressed by a series of enormous leaps. Excitement among those on board was naturally raised to the highest pitch by this account—especially as a naturalist, Sir Joseph Banks, was a member of the expedition—and soon after a specimen of the animal in question was killed. This creature was the one we know by the name of the great gray kangaroo and was the first member of the family which came fully under European notice.

The name kangaroo is said to be of Australian origin, although it appears to be now unknown to the natives. The kangaroos are characterized by the great length and powerful development of the hind-limbs as compared with the front pair; and the enormous size of the tail, which is regularly tapering, and evenly covered with fur from end to end.

All the members of the kangaroo family are purely vegetable feeders, and are mainly confined to Australia and Tasmania.

From the general form and structure of the kangaroo, there can be little doubt that its chief progressive motion must be by leaps; in these exertions it

has been seen to exceed twenty feet at a time, and this so often repeated as almost to elude the swiftness of the fleetest greyhound; and it is able with ease to bound over obstacles as much as nine feet or more in height.

Kangaroos have vast strength in their tail. This they occasionally use as a weapon of defense; for they are able to strike with it so violent a blow as even to break a man's leg. But this is not their only weapon, for, when hunted, as they sometimes are, with greyhounds, they use both their claws and teeth. On the hounds' seizing them they turn, and catching hold with the nails of the fore-paws, strike the dog with the claws of their hind feet, and sometimes lacerate his body in a shocking manner.

The kangaroo generally feeds standing on its four feet, in the manner of other quadrupeds, and it drinks by lapping. In a state of captivity it has a trick of sometimes springing forward, and kicking, in a forcible manner, with its hind-feet, during which action it rests or props itself on the base of its tail.

The female seldom produces more than one young at a birth, and so exceedingly diminutive is this that it scarcely exceeds an inch in length, and weighs but twenty-one grains. It is received into the abdominal pouch of the mother. At this period of its growth its fore-paws are comparatively large and strong, and the claws extremely distinct, to facilitate its motion during its residence in its mother's pouch. The hind legs, which are afterwards to become very bony and stout, are then shorter and smaller than the others.

The young one continues to reside in the pouch till it has nearly attained maturity. It occasionally creeps out for exercise or amusement, and even after it has quitted this retreat it often returns to it for shelter on the least indication of danger. When they feed in herds of thirty and forty together, as they sometimes do, one of the herd is generally stationed as a guard at a distance from the rest. Their eyes are furnished with winking membranes, capable of being extended at pleasure over the ball.

In the dense tropical forests of New Guinea and the north of Queensland are found tree-kangaroos; and it is evident that these are specially modified types which have taken to this mode of life, and are in no way connected with the ancestral forms of the family. The tree-kangaroos are easily recognized by the general proportions of the two pairs of limbs to the body being normal; the length of the front pair being only slightly less than that of the hinder. The tail is very long, and thickly furred. Comparatively little is known of any of the species in their native haunts; although it appears that they spend most of their time in the trees. Dr. Guillemard, who had two of these ani-

mals alive on board ship, which he had captured in New Guinea, writes that the tree-kangaroo "is as yet a tyro in the art of climbing, performing this operation in the slowest and most awkward manner. Our pets, for instance, would take a full minute or more in ascending the back of a chair, but their hold is most secure; and if we wished to pull them off, we had considerable difficulty in doing so, so tightly do they cling."

The natural walking position of this animal is on all four legs, although it constantly sits up on the hinder legs, or even stands on a tripod composed of its feet and tail, in order to look out over the tops of the luxuriant grass



A HERD OF KANGAROOS.

among which it lives. The leaping movements are required for haste or escape, the length of each leap being about fifteen feet.

Of course this swiftness would soon leave its pursuers behind, but the Australian is able to break one of its limbs, or strike it insensible to the ground with his boomerang, the most wonderful weapon that uncivilized man ever produced. This extraordinary missile is a flat, curved piece of wood, which the Australian natives can wield with wonderful skill, making it describe circles in the air, or rush at an object, and then return to its owner's feet;

or throw it at the ground and make it leap over a tree and strike an object at the other side.

Hunting this animal is a very favorite sport with both colonists and natives. The latter either knock it down with the boomerang, spear it from behind a bush, or unite together and hem in a herd, which soon fall victims to the volleys of clubs, spears and boomerangs which pour in on all sides.



THE "BOOMER" KANGAROO AND ITS HABITS.

The colonists either shoot it or hunt it with dogs, a pack of which is trained for that purpose, just as fox-hounds are taught in England.

The "old man," or "boomer," as the colonists call the great kangaroo, invariably leads the dogs a severe chase, always attempting to reach water and escape by swimming. It is a formidable foe to the dogs when it stands at bay, as it seizes the dog with its fore-legs, and either holds him under water until he is drowned, or tears him open with a well-directed kick of its powerful hind-feet, which are armed with a very sharp claw.



STORY OF THE HEDGEHOG.

School children in England become familiar with a strange little animal that is rarely seen in this country, although it inhabits parts of Africa and Asia. It is the hedgehog, or urchin, which is guarded with spikes. These spikes are fixed into the skin in a very beautiful and simple manner. When the hedgehog is annoyed it rolls itself up, and the tightness of the skin causes all its spines to stand firm and erect, bidding defiance to an unprotected hand. While rolled up, even the dog and the fox are baffled by it; but their ingenuity enables them to overcome the difficulty by rolling it along until they push it into a puddle or pool, when the astonished hedgehog immediately unrolls itself to see what is the matter, and before it can close itself again is seized by its crafty enemy.

Many more fortunate animals have outlived the aspersions cast upon their character by ignorant persons, but the prejudice against the hedgehog is still in full vigor in the agricultural districts. Scarcely a farmer or a laborer will be persuaded that the hedgehog does not suck the cows. Now this is an impossibility for the hedgehog. The food of the hedgehog consists not of cow's milk, but insects, frogs, mice and snakes. I once placed a snake in the same box with a hedgehog. The hedgehog gave the snake a severe bite, and then rolled itself up, this process being repeated until the spine of the snake was

broken in several places; it then began at the tail, and ate the snake gradually, as one would eat a radish.

The hedgehog also feeds on earthworms, slugs and snails, and in destroying the latter it may certainly be regarded as a friend to the gardener. The consumption of earthworms is performed in a rather curious manner. These animals are seized when they are enjoying the damp freshness of the air out of their holes, in summer evenings, and slowly passed into the mouth of their enemy from one end to the other, apparently by the simple process of mastication with the molar teeth, the unconsumed portion of the worm being constantly transferred from one side of the mouth to the other, so that both sides of the jaw may come into play. This must be an unpleasant operation for the worm, much as its captor may enjoy it. It is uncertain whether the larger snails are eaten by the hedgehog, but the smaller species certainly form a portion of its diet.

The new-born young are almost naked, and their imperfect spines are soft, flexible and white, although rapidly hardening in the course of a few days. They are at first totally blind, and quite incapable of rolling themselves up. The nest in which the young are born is carefully constructed, and is said to be always protected from rain by an efficient roof. In winter the European hedgehog hibernates completely, laying up no store of food, but retiring to a nest of moss and leaves, where, rolled up in a ball, it lies torpid till awakened by the returning warmth of spring.

The flesh of the hedgehog is said to be good eating, and the Gypsies frequently make it a part of their diet, as do the people in some parts of the continent.

There is a peculiar method of preparing the animal for food, strongly reminding one of the earth ovens used by the Polynesians. The hedgehog is simply wrapped up in a mass of clay and put on the fire. In process of time the clay is thoroughly baked, and cracks open, when the hedgehog is supposed to be cooked. On opening the clay, the skin comes off with it, while the insides of the animal have formed themselves into a hard ball, and are taken out entire. By this method of cooking the juices are retained, and not suffered to dissipate, as they would if it were roasted.

The common hedgehog is characterized by the short and almost imperceptible neck, the pig-like snout, from which it derives its popular name, and also by the shortness of its limbs. Exclusive of the short naked tail, which measures about one and one-half inches, an average-sized hedgehog is about ten inches in length. The great peculiarity of all the hedgehogs is the power

they possess of rolling themselves up into a ball-like form, presenting an array of spines, impenetrable to the great majority of other animals. This rolling-up process is effected by the aid of an extraordinary development of a layer of muscles found beneath the skin. When rolled up, the head and feet are tucked inwards, so that only the spines are exposed; and it requires a bold dog or fox to attack a hedgehog when in this condition. Under the microscope the spine is seen to be marked by a number of parallel grooves.

Hedgehogs are represented by five distinct varieties in India. It is remarkable that while one of these hedgehogs is found in Madras, no repre-



EUROPEAN HEDGEHOGS.

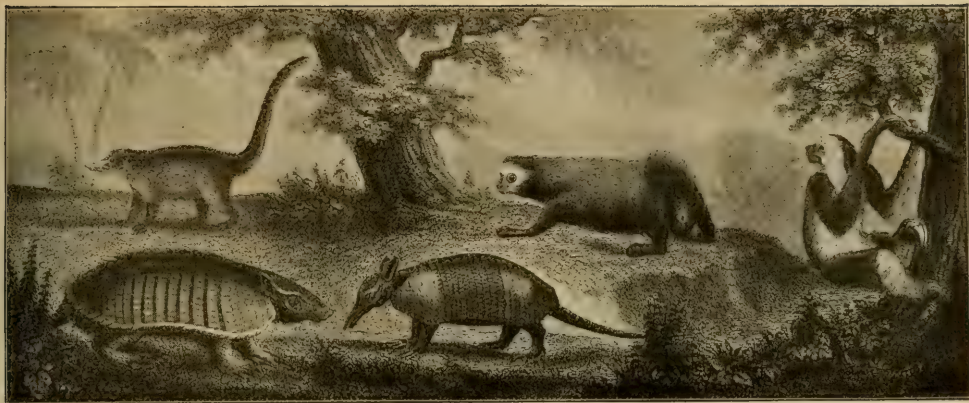
sentative is recorded from the Central Provinces and Bengal, the other species not occurring till we reach the North-West Provinces, the Punjab, etc. But little is known of the habits of these Indian species, and nothing as to their breeding; although it is probable that in both these respects they conform closely to their European cousin. The long-eared Afghan hedgehog common in the neighborhood of Kandahar and Quetta, hibernates, but the species from the Punjab and Southern India are active at all seasons of the year, thus showing how absolutely dependent is the habit of hibernation upon climate. The collared hedgehog found in the plains of North-Western India, inhabits

sandy country, hiding in holes beneath thorny bushes or in tufts of grass during the day, feeding chiefly on insects, especially a species of *Blaps*, and also on lizards and snails. It makes a grunting noise when irritated, and when touched suddenly jerks up its back so as to throw its spines forward, making at the same time a sound like a puff from a pair of bellows. The Afghan hedgehog feeds on the slugs and snails so common in the fields around Kandahar, as well as worms, insects and lizards. It hides during the day in holes; and hibernates from the end of October or beginning of November till February.

Young hedgehogs are pretty little creatures. The mother generally produces from four to six at a birth. In color, they are, at first, a rose-white. When they get to be the size of a hen's egg, their prickles are well developed. The mother nurses them for a short time only, and then leaves them to shift for themselves, which they are well able to do.

Hedgehogs are particularly fond of cockroaches, and people in England often keep them in the kitchen to destroy these pests.

I once saw a hedgehog roll itself into a ball and drop a distance of fourteen feet into an area way without doing itself the least damage. This gives a very good idea of the strength of the prickles in its skin.



STORY OF THE WILD GOAT.

I have hunted the wild goat in the Rocky Mountains, in equatorial Africa, in bleak Siberia and in the lofty Himalayas. In each of these widely separated districts the animal shows the same general characteristics and the hunter must needs use great caution if he hopes to secure his quarry.

The so-called goat of the Rocky Mountains is about the size of a large sheep, and averages one hundred pounds in weight. It has very short and stout legs, terminating in broad and blunted hoofs, pointed ears and jet black horns, curving backwards, and ringed for about half their length, but smooth above this. The body is covered with a long coat of white hair, which is nearly straight, and falls on the sides of the body and limbs, but is erect along the middle of the back, and as it becomes longer over the withers and haunches the animal looks as though it had two humps. Beneath the hair there is a thick coat of wool. In length the horns vary from six to ten and one-half inches.

The range of this animal extends through the Rocky Mountains from about latitude thirty-six degrees in California at least as far north as latitude sixty-two degrees. I believe that it will be found as far north as the mountains reach. It is extremely abundant in British Columbia, ranging from its southern boundary to the watershed of the Arctic Ocean, and from the coast-line to the Rockies. Here, amid nature's wildest scenes, amid storm-swept

cañons and beetling crags, amid steel-blue glaciers and snowy peaks, where the silence is seldom broken save by the rush of mountain torrent, the howling of the storm, or the crashing of the treacherous avalanche—here, far removed from the trail of the ordinary hunter, the mountain-goat, solitary in its habits, and contented with its chaotic and gloomy surroundings, increases and multiplies.

Its sure-footedness and its boldness are proverbial, as is its unpleasant



SPIRAL-HORNED GOAT OF AFGHANISTAN.

odor. The power possessed by the goats of ascending very steep heights is marvelous. On more than one occasion I have seen—contrary to the teaching of *Æsop*—that when two individuals have met on a path too narrow for both to pass, one has lain down in order that the other might go over his back.

The Spanish wild goat inhabits the Pyrenees, the ranges of Central Spain and the mountains of Portugal. The animal seeks the highest ridges and peaks of the mountains during the summer, but in winter the doe comes to

the valleys, often to the villages. Far up among the snow-covered heights can be found the old bucks, who disdain seeking shelter from the storms.

When feeding or reposing, sentinels are placed in commanding positions to apprise the flock of approaching danger, which they do by means of a loud snort, upon which the whole company at once takes to flight.



ALPINE WILD GOATS.

Probably the most active of the wild goats is the pasang of Persia, from which species the various breeds of domestic goats are derived. This species has long scimitar-like horns, much compressed, with the front edge forming a sharp keel. It frequents craggy and rocky districts, taking leaps of great length with unerring precision. In spite of the constant persecution to which

it is subjected, it exists in vast numbers. On the Kuh-i-barf, a not very lofty or extensive hill, constantly shot over, near Shiraz, I once counted over a hundred in a herd, which had been driven together by two days' consecutive fusillade. It is marvelously shy and wary. In my earlier residence in Persia I spent many a weary day after them, but never managed to bag a buck. Even native sportsmen, though admirable shots and thoroughly familiar with every nook and cranny of the hills, rarely get one by fair stalking; most of those killed being obtained by building a wall of loose stones near water and shooting the goats when drinking. The males drink in the morning and evening only, but the females, in hot weather, at least, drink also at midday. Sixty miles north of Shiraz I came suddenly upon a herd of twenty or more does and kids, drinking by the roadside, a couple of hundred yards from the foot of the hills. Except when alarmed, bucks and does seem to keep apart.

In Baluchistan these goats inhabit barren rocky hills, but in parts of Asia Minor they are found on forest-clad uplands. In such localities they may often be found within hearing of the drovers on the roads, or even of the railways; but this confidence is accompanied by exceeding watchfulness. The number in a flock in these districts is generally from four to ten, and at the time of my observations bucks and does were found together. Sentinels are almost always posted to warn the flock, these being relieved at short intervals; and it appears that this sentry-duty is undertaken according to seniority, the youngest animals commencing first, and the oldest buck taking his turn last. In Asia Minor pasang are hunted both by driving and by stalking; but they are so cunning that the former method is not generally very successful. The Cabulis hunt them on the lower ground of Afghanistan with greyhounds.

The bezoar-stone, so highly esteemed in Persia as an antidote to poison and a remedy for several diseases, is a concretion found in the stomach of the pasang, from whence it derives its old European name of Pazen, or Pasen.

The wild goats of the Isle of Giura are probably derived from a domestic race, perhaps crossed with the pasang. Goats have also run wild in many other places, more especially mountainous islands like St. Helena, Tavolara near Sardinia, and Juan Fernandez. In St. Helena these wild goats have completely destroyed a large portion of the native flora, and this has resulted in the disappearance of much of the fauna. Goats were introduced by the Spaniards into Juan Fernandez in the year 1563. These soon increased enormously, and in order to diminish their numbers dogs were subsequently let loose, and likewise ran wild.



STORY OF THE MUSQUASH.

There are few American boys who have not had some experience with the musquash, commonly called muskrat. I have trapped hundreds of them accidentally. By this I mean that I have set traps for beavers, otters and minks, and upon visiting them the next day would find in a number of them only muskrats, instead of the prey I was after.

The musquash is a massively-built animal about a foot in length, with a tail ten inches long. The general color of the fur is blackish brown, turning into gray on the muzzle and under parts, and has the soft and velvety texture of that of the beaver. It is, however, mostly shorter than in the latter, although on the back and flanks there are interspersed a number of longer bristle-like hairs.

The geographical range of the musquash extends from the so-called barren grounds of Arctic America to the genial climate of the Rio Grande, while it also reaches from the Atlantic to the Pacific.

Musk-rats are thoroughly adapted for life in the water, and generally frequent ponds, swamps and sluggish streams. Although their food consists mainly of the roots of grasses and water-plants, they consume considerable quantities of river mussels; they will likewise catch and eat fish, while they are said at times to devour the flesh of such individuals of their own species

as they may find dead, or wounded and helpless. Occasionally they wander considerable distances from the water.

The musquash is an excellent diver, being able to remain below the surface of the water for a considerable time. It is less of a night animal than the beaver, and often may be seen swimming about in broad daylight, especially in cloudy weather. When diving it makes a loud noise by striking the water with its tail, the same as a beaver.

Its long burrow always has its entrance below the surface of the water, from which it inclines upwards in the bank ten or fifteen feet, and then widens out into a large chamber where the musquash makes its nest. Sometimes it will have one or two burrows leading from this chamber further into the bank.



THE MUSQUASH.

Frequently the musquash collects heaps of vegetable matter in the form of hay-cocks over the place where it nests, with an airhole connecting its chamber with the outside world. In this respect also it resembles the beaver, except that many of the "musk-rat houses" contain no mud or sticks, but consist wholly of balls and knots of roots and swamp-grasses.

The materials of which the hut is composed, it will be observed, are such as serve as food for the animals during the long winters; hence the musk-rat's house is in reality a storehouse, which he devours piecemeal as the winter advances.



STORY OF THE WART-HOG.

I do not know of any uglier animal than the wart-hog, with its huge tusks, big warty protuberances below the eyes and fierce-looking bristly mane. They are found over a large part of Eastern Africa, and are dangerous animals to come upon unawares.

In Abyssinia, its habits are very similar to those of ordinary pigs. It lives amongst bushes or in ravines during the day, and comes out to feed in the evening, still keeping much to bush-jungle. The large males are usually solitary; the younger animals and females live in small herds, apparently not exceeding eight or ten in number. I never saw large "sounders," such as are so commonly met with in the case of the Indian hog. It feeds much on roots, which it digs up by means of its huge tusks. It also appears to dig large holes, in which it occasionally lies; these are perhaps intended for the young. Despite its formidable appearance, the Abyssinian wart-hog is a comparatively timid animal, far inferior in courage to the Indian wild hog. Several which I wounded showed no inclination to charge under circumstances in which an Indian pig would certainly have shown fight. The flesh is savory, but dry and hard, even in comparatively young animals.

When brought to bay by dogs, wart-hogs make a determined stand, and inflict severe injuries on their assailants. If excited, they carry their long tails stuck straight upright.

In South-Eastern Africa—where they are known to the natives by the name of *Indhlovudawani*—wart-hogs are found on the plains in light thorn-jungles; and they are abundant in the districts around Mount Kilima-Njaro. In those regions they generally occupy the deserted burrow of an aard-vark, or other animal. They have a most curious mode of exit when they bolt—a dangerous one if you are not up to it. As they emerge from a hole, they turn a somersault on to the back of it, instead of coming straight out like an ordinary animal, and as that is just the spot where one would naturally



WART HOG OF SOUTH EASTERN AFRICA.

stand, more than one man has had his legs ripped open before he learnt the wisdom of experience. On more than one occasion I have seen a male wart-hog walk deliberately through a pack of large hounds without taking the slightest notice of them, so long as they refrained from biting. Did, however, one bolder than the rest, venture to come to close quarters, the wart-hog with a sudden jerk would either lay its assailant crippled on the ground, or send it howling away.

The young are striped, as are the young of the wild boar.



STORY OF THE RACCOON.

The raccoon is about the size of a large fox, and an inhabitant of Canada and various parts of the United States. It derives its name, *lorax*, from the habit it is said to possess of washing its food before eating it. Its skin is very valuable, and is much sought after by American hunters, who pride themselves on their skill in shooting this active and wary animal.

The food of the raccoon is principally small animals and insects. Oysters are also a very favorite article of its diet. It bites off the hinge of the oyster, and scrapes out the animal in fragments with its paws. Like a squirrel when eating a nut, the raccoon usually holds its food between its fore-paws pressed together, and sits upon its hind-quarters while it eats. Poultry are very favorite objects of its attack, and it is said to be as destructive in a farm-yard as any fox, for it only devours the heads of the murdered fowl. Like the fox, it prowls by night.

When taken young it is easily tamed, but very frequently becomes blind soon after its capture. This effect is supposed to be produced by the sensitive state of its eyes, which are only intended to be used by night; but, as it is frequently awakened by daylight during its captivity, it suffers so much from the unwonted glare that its eyes gradually lose their sight.

They delight to sport in the shallow water on the margins of pools and streams, where they capture the crayfish lurking beneath the stones, and the fresh-water mussels buried in the mud and sand. They also catch such fish

as happen to get stranded or detained in the small pools near the shore, although they are unable to dive in pursuit of their prey. They are, however, good swimmers. Although first-rate climbers, and making their nests in a hollow high up in some large trees, raccoons cannot be considered by any means thoroughly arboreal animals. Thus they neither hunt their prey among the tree-tops, nor gather nuts and fruits from the branches, nor do they feed upon the young shoots and twigs. Trees form, however, their resting and their breeding-places, and likewise their refuge when pursued by human or other foes. With the falling shades of night they invariably descend to hunt their prey and search for food.

The raccoon hibernates during the severest part of the winter, retiring to his nest rather early, and appearing again in February or March, according to the earliness or lateness of the season. Disliking to wade through deep snow he does not come out much till the alternate thawing and freezing of the surface, suggestive of coming spring, makes a hard crust upon which he can run with ease. He does not usually walk many miles during a single night, and consequently is soon tracked to the tree, in some hole of which he has retired for the day. It is unusual to find a raccoon alone, for they commonly live and travel in small companies, consisting of the several members of a single family. They do not return to the same nest every morning, but often make little excursions in various directions, being gone several days at a time, and taking refuge, about daylight, in any convenient arboreal shelter. Though preferring a hollow limb high up in some giant elm, ash, or basswood, they will put up with almost any kind of a hollow trunk. I have known them to spend the day in old stubs, in hollow logs, and even in the poor shelter afforded by the angle where a falling tree had lodged in a crutch.

In Central America and the more southern districts of North America, the raccoon remains active throughout the winter, as the climate would not necessitate any hibernation. In the Adirondacks the young the produced in the spring—generally during the month of April; and there are usually from four to six in a litter. They remain with their parent about a twelvemonth. The nest which, as already mentioned, is placed high up in a tree, has but little care bestowed upon its construction.

It has long been known that this raccoon is in the habit of moistening its food with water before eating it; and it doubtless received its distinctive specific name from this habit, which has been of late years verified.

The crab-eating raccoon is a nearly-allied South American species, dis-



WHITE-NOSED RACCOONS. (COATI)

tinguished by its superior dimensions and its much shorter fur. It is found typically from Panama to Colombia and Guiana; but the raccoons found further south, and extending through Brazil to Paraguay, are entitled to rank as a distinct species, on account of their darker feet. They are commonly known as black-footed raccoons.

The coatis, or long nosed raccoons, are easily recognized by their long snouts, which are naked at the tip and which the animal moves up and down like a piece of rubber. Its claws are longer and stouter than those of the common raccoon. The white-nose coati is found in Mexico and Central America; the second species, the red coati, is found in South America from



COMMON RACCOON.

Surinam to Paraguay. They usually go about in small troops of from ten to twenty.

The raccoon is one of the most valuable of the fur-bearing animals of North America, and is consequently much persecuted. Raccoon skins were formerly used as a recognized circulating medium in the States of the Mississippi Valley, and were usually valued at 25 cents apiece.

The raccoon may be easily caught in steel traps; but it is essential that these should be set under water near the margins of swamps or streams. The more sporting method is, however, to hunt these animals at night with specially-trained dogs, which are usually a breed of fox-hounds.



THE STORY OF THE COBEGO.

While in the interior of Mindanao, one of the largest islands in the Philippine group, I was once somewhat startled to see a large bird, as I then thought, fly over me. It lit on a tree near by and I stopped to study it. To my great surprise I saw an animal fully two feet long and weighing about twenty pounds seated on a limb of the tree. I shot it and found that it was a female cobego. It had two of its young clinging to its breast when it fell.

An investigation showed me that the animal has a parachute formed by folds of skin, by means of which it can leap fifty or sixty yards. While not possessing the power of true flight, like a bat, its leaps exceed those of the flying squirrel. Its integument is so elastic that extended the cobego covers fully a square yard of area, and the long tail is of great service in sustaining its flight.

The common cobego is found in Sumatra, Borneo, Java, the Malay Peninsula, Tenasserim, and Siam. It is sluggish in its motions, at least by day, going up a tree by short runs of a few feet, and then stopping a moment as if the action was difficult. It rests during the day clinging to the trunks of trees, where its olive or brown fur, mottled with irregular whitish spots and blotches, resembles closely the color of mottled bark, and no doubt helps to protect it. Once, in a bright twilight, I saw one of these animals run up a trunk in a rather open place, and then glide obliquely through the air to another tree, on which it alighted near its base, and immediately began

to ascend. I paced the distance from the one tree to the other, and found it to be seventy yards; and the amount of descent I estimated at not more than thirty-five or forty feet, or less than one in five. This I think proves that the animal must have some power of guiding itself through the air, otherwise in so long a distance it would have little chance of alighting upon the trunk. The cobego feeds chiefly on leaves, and possesses a very voluminous stomach. The hair is very small; and the animal possesses such a remarkable tenacity of life that it is exceedingly difficult to kill it by any



THE COBEGO OF THE PHILIPPINE ISLANDS.

ordinary means. The tail is prehensile, and is probably made use of as an additional support while feeding. The animal is said to have one or two young at a time, and my own observation confirms this statement, for I once shot a female, with a very small, blind, and naked little creature clinging closely to its breast, which was quite bare and much wrinkled. On the back, and extending over the limbs and membrane, the fur of these animals is short but exquisitely soft, resembling in its texture that of the chinchilla.



THE STORY OF THE GAZELLE.

The gazelle is regarded as the embodiment of grace and beauty, and is celebrated in song and story. It is usually of a sandy color and has a white streak on the side of the face from the base of the horn nearly to the nose, thus cutting off a dark triangular patch in the middle of the forehead, while the streak itself is bordered by a dark line. The horns, which are generally present in both sexes, are recurved and completely ringed throughout the greater part of their length. Most of the gazelles do not exceed thirty inches in height, although the mohr reaches thirty-six inches. There are about twenty-one living species.

The gazelle so famous in Oriental poetry inhabits Arabia and Syria. Its eyes are very large, dark and lustrous, so that the Oriental poets love to compare the eyes of a woman to those of a gazelle, just as Homer constantly applied the epithet ox-eyed to the more majestic goddesses, such as Juno and Minerva. It is easily tamed when young, and is frequently seen domesticated in the court yards of houses in Syria. Its swiftness is so great that even a greyhound cannot overtake it, and the hunters are forced to make use of hawks, which are trained to strike at the head of the gazelle, and thus confuse it and retard its speed, so as to permit the dogs to come up. The color of this pretty little animal is a dark yellowish brown, fading into white on the under parts.

One of the most important members of the gazelle family is the South

African springbok. The springbok derives its name from its habit of suddenly leaping in the air; and is remarkable both for the vast numbers in which it formerly occurred, and for its periodical migrations. I was once a spectator of the remarkable scene produced by one of these migrations. For about two hours before dawn I had been lying awake in my wagon, listening to the grunting of the buck within two hundred yards of me; imagining that



THE GOITRED GAZELLE.

some large herd of springboks was feeding beside my camp, but, rising when it was light and looking about me, I beheld the ground to the northward of my camp actually covered with a dense living mass of springboks, marching slowly and steadily along. They extended from an opening in a long range of hills on the west, through which they continued pouring like the flood of some great river, to a ridge about a mile to the north-east, over which they

disappeared—the breadth they covered might have been somewhere about half a mile. I stood upon the fore-chest of my wagon for nearly two hours, lost in astonishment at the novel and wonderful scene before me, and had some difficulty in convincing myself that it was a reality which I beheld, and not the wild and exaggerated picture of a hunter's dream.

The goa or Thibetan gazelle is distinguished by the white disc around the tail, the long winter-coat, short ears and tail, the greatly curved horns and the uniform color of the face. The height of the animal is twenty-four inches;



A HERD OF GAZELLES

and the largest recorded horns measure fifteen and three-quarter inches in length; the number of rings varying from twenty to thirty. This gazelle inhabits the Thibetan plateau at elevations of from thirteen thousand to eighteen thousand feet, and goes in small parties of from two or three to a dozen. It is less shy than other species.

Another of the true gazelles is characterized by the white of the rump extending forward in an angle into the fawn-color of the haunches; both sexes having horns, which are frequently longer than in the other groups; the animals themselves being also relatively large.

Its swiftness is such that it can but seldom be taken with dogs; but it does not leap in the air like the dorcas. This gazelle keeps much to waste ground, especially where that is broken up by ravines, but it is seldom seen on alluvial plains, and it haunts cultivation less than the [Indian] antelope. I have frequently found it among scattered bushes or thin tree-jungle, and it may be met with on undulating ground even on the top of hills; it is commonly found amongst sand-hills, and is nowhere so abundant as in parts of the Indian desert. It lives on grass and the leaves of bushes, and, I believe, never drinks, for it is common in tracts where there is no water except from deep wells.

A peculiar gazelle, known as the gerenuk, or Waller's gazelle, inhabits Eastern Africa, and is remarkable for the great length of its neck, which has been likened to a miniature giraffe.

The gerenuk is found all over the Somali country in small families, never in large herds, and generally in scattered bush, ravines and rocky ground. I have never seen it in the cedar-forests, nor in the treeless plains. Gerenuk are not necessarily found near water; in fact, generally in stony ground with a sprinkling of thorn-jungle. Its gait is peculiar. When first seen, a buck gerenuk will generally be standing motionless, head well up, looking at the intruder, and trusting to its invisibility. Then the head dives under the bushes, and the animal goes off at a long, crouching trot, stopping now and again behind some bush to gaze. The trot is awkward-looking, and very like that of a camel; the gerenuk seldom gallops, and its pace is never very fast. In the whole shape of the head and neck, and in the slender lower jaw, there is a marked resemblance between the gerenuk and the dibatag. It subsists more by browsing than by grazing, and it may not unfrequently be observed standing up on its hind-legs, with outstretched neck, and its fore-feet resting against the trunk of a tree, in order to pluck the foliage.

The goitred gazelle is rather a heavy animal, found in Eastern Siberia, Chinese Mongolia and Western Thibet. It also inhabits Persia, and a favorite sport of Persian noblemen is to hunt it with the chita, or trained hunting leopard.

A beautiful species of gazelle is the Dorcas, found in Egypt and Barbary, where it lives in large troops upon the borders of the cultivated country, and also in the deserts. When pursued it flies to some distance, then stops to gaze a moment at the hunters, and again renews its flight. The flock, when attacked collectively, disperse in all directions, but soon unite, and when brought to bay defend themselves with courage and obstinacy, uniting in a close circle, with the females and fawns in the center, and presenting their

horns at all points to their enemies; yet, notwithstanding their courage, they are the common prey of the lion and panther, and are hunted with great perseverance by the Arabs and Bedouins of the desert. When taken young they are easily domesticated, and soon become familiar. This animal is frequently cut upon the monuments of Egypt and Nubia.

Referring again to the beautiful Arabian gazelle, or as it is properly called,



RED-FRONTED GAZELLE.

ariel gazelle, it may be said that it is still hunted by the Arabs for its flesh, which is excellent, as it was by the ancient Egyptians.

On the eastern frontier of Syria are several places allotted to the hunting of this animal, or rather for its entrapment or destruction. An open space on the plain, about one mile and a half square, is enclosed on three sides by a wall of loose stones too high for the gazelle to leap over. Gaps are left in different parts of the wall, and at each gap a deep ditch is sunk on the outside.

The inclosure is situated near some rivulet or spring to which the gazelles resort in summer. When the sport is to begin, many peasants assemble and watch till they see a herd of gazelles advancing from a distance toward the inclosure, into which they drive them. The gazelles, frightened by the shouts of the people and the discharge of the fire-arms, endeavor to leap over the wall, but can only effect this at the gaps, where they fall into the ditch outside, and are easily taken, sometimes by hundreds. The chief of the herd always leaps first, and the others follow him one by one. The gazelles thus captured are immediately killed, and their flesh sold to the Arabs and neighboring Fellahs. Of the skin a kind of parchment is made, and used to cover the small drum with which the Syrians accompany some musical instruments or the voice.

Referring again to the trek of the Springboks: The migration is called a trek bokken. So great is the number of animals in these migrations that those which happen to get into the rear of the troop are lean and half-starved before the migration is concluded, from the advanced ranks cropping the scanty pastures almost bare, and thus leaving those behind nearly destitute of food; but when the journey is concluded, and the troop begins to retrace its steps northward, those which formed the van during the advance are necessarily in the rear returning, soon lose their plump condition, and are in their turn subjected to want and starvation. During these migrations the herds are closely followed by lions, panthers, hyenas and wild dogs, which hang upon their flanks and destroy great numbers of them. There is perhaps no spectacle in nature more inspiring than a flock of these beautiful gazelles enlivening the dreary brown karroos of South Africa with their graceful motions; now leaping perpendicularly upward to the height of six or seven feet, displaying at the same time the snowy-white marks on their croups, and anon flying over the desert with the speed of a whirlwind.



STORY OF THE CHAMELEON

There is a popular belief that the chameleon lives entirely upon air.

The reason for this belief was found in the facts that the chameleon is a very sluggish creature and goes so long without eating that people who had observed it were led to think, first, that it could not move fast enough to catch insects, which would naturally be its food, and secondly, never having seen it eat they imagined it never did.

The chameleon does not live upon air alone, but principally upon flies and small insects, but nature has equipped it with a peculiar tongue especially adapted to catching its food. The chameleon's tongue is a hollow tube capable of being extended to a great length with lightning like rapidity. At the end is a fleshy knob which has a cup-like cavity in its outer surface, and this is always covered with a sticky secretion. When the chameleon has selected a fly for its prey, it rolls its strange-looking eyeballs, and then its tongue darts out to twice the length of its body and is redrawn like a flash with the fly on the end of it. It rarely misses its aim.

The chameleon is a member of the lizard family, and is pleasing to the sight.

It has long been famous for its power of changing color—a property, however, which has been greatly exaggerated, as I shall show. The usual color of the chameleon when in its wild state is green, from which it passes through the shades of violet, blue and yellow, of which the green consists.

In this country, however, it rarely retains the bright green hue, the color fading into yellowish gray. The cause of the difference of color in the two lacteal folds of the body is the manner in which the light acts upon the animal. The side turned toward the light is always of a darker color. This holds good with reference to the direct and diffused light of the sun and moon as well as to artificial light.

Notwithstanding the strictly symmetrical construction of the chameleon as to its two halves, the eyes move independently of each other, and convey different impressions to their different centers of perception; the consequence is, that when the animal is agitated, its movements appear like those of two animals glued together. Each half wishes to move its own way, and there is no concordance of action. The chameleon, moreover, may be asleep on one side and awake on the other. When cautiously approaching my specimen at night with a candle, so as not to awake the whole animal by the shaking of the room, the eye turned toward the flame would open and begin to move, and the corresponding side to change color, whereas the other side would remain for several seconds longer in its torpid and changeable state, with its eye shut.

It seems probable that the change of color may be directly owing to the greater or less rapidity of the circulation, which may turn the chameleon from green to yellow, just as in ourselves an emotion of the mind can tinge the cheek with scarlet, or leave it pallid and death-like.

The common chameleon is sixteen to eighteen inches long, the tail being nearly as long as the body.



CHAMELEONS.



THE STORY OF THE FOSSA.

The fossa of Madagascar, which is the largest flesh-eating animal found in that island, is the species connecting the more typical members of the cat family. This peculiar animal differs, indeed, so remarkably from all the other representatives of the tribe, that it has been considered by some that it ought to be referred to a separate family.

The fossa is a nearly uniformly-colored animal, with short and thick pale brown fur; and it attains a total length of about five feet from the snout to the tip of the tail, the length of the tail being more than three-quarters that of the head and body. The curved claws are sharp and retractile; and the feet, each of which is furnished with five claws, are very similar to those of a cat, except that the whole sole of the hind pair is naked, and applied to the ground in walking.

It is a purely nocturnal creature, of a fierce disposition, but scarcely anything is yet known of its habits.

The fossa is undoubtedly one of the most interesting beasts of prey, if not one of the most interesting of animal creatures in general. Any scientist who disputes the fact that intermediate forms, which play such an important part in natural history in its newest aspect, really exist, must keep silence when he beholds this animal. The fossa cannot be determined nor comprehended in any other way but as an intermediate or transitional form—as a link connecting the real cats with kindred animals. These animals existed

in a less perfect state at an earlier period of the earth's development, and are called stealthy cats, including the palm-civets, civets, genets and mungoses. Should the body of a large, reddish-brown palm-civet be imbued with the lively, sportive nature, the intense elasticity and supple mobility of a true



THE FOSSA

cat, this unique animal would present in itself the combination of these contradictory features. The feet, which are furnished with curved, sharp, and somewhat retractable claws, are very similar to those of a cat, except that the whole sole of the hind pair is knotted, and applied to the ground in walk-

ing. The picture, unfortunately, does not convey a correct idea of the disposition of the animal, the splendid, serpent-like, wavy motions of its body, which is of a light brown color tinged with red and gray. The muscular structure, however, shows a powerful, compact build. The limbs, though small, are well knit. The ears are large and rounded, while the tail measures more than three-fourths of the length of the head and body. The fossa has a total of thirty-six teeth, of which the hinder ones, both in form and number, closely resemble those of the cat.

It is because the fossa is the largest of the flesh-eating animals of Madagascar that the lemurs flourish in that island. The fossa undoubtedly kills many of the smaller lemurs, but owing to the agility of those monkey-like little animals, it is difficult for even such an active, agile animal as the fossa to catch them—hence many escape because the fossa turns its attention to the pursuit of still smaller and easier prey.



THE STORY OF THE WALRUS

Thousands of walrus are killed every year in the Pacific ocean, but at the present rate hunting them must soon cease as the animal is fast being killed off and will probably be extinct in a decade or two. The animal is desired because of its valuable oil and tusks, but its flesh and hide are also put to use.

The walrus is an animal of enormous size. It sometimes measures nearly eighteen feet in length, and ten or twelve feet in circumference. In the upper jaw there are two long tusks, which bend downward. The head is small, the neck short, and body round. The eyes are very small, and instead of external ears there are only two small circular orifices.

The figure of the walrus is more noticeable for strength than grace, though in its outline there is a something suggestive of a bulky horse—and hence our seamen sometimes call it the seahorse. Like the whale family, its body is wrapped round with a layer of oily fat; while its skin, an inch thick, is covered with close hair.

In localities where they have long been the object of man's pursuit they have grown vengeful and wary; in less frequented regions they lie on the ice in unsuspecting security, and do not suffer the approach of the hunters to disturb them. They do not willingly attack man; but when forced to fight, conduct themselves with wonderful coolness and courage—dash in serried array against the boats, and with their massive tusks endeavor to

capsize them. They display a truly heroic devotion to their young, and will perish in their defense.

The walrus is partial, like some higher animals, to the sound of its own voice, and will recline on the ice for hours listening to its continuous bellow.

That he is a dangerous animal to attack may be seen from the following anecdote:—A young and courageous, but imprudent Eskimo, plunged his spear or harpoon into a brown walrus; the beast's savage aspect alarmed him when too late, and before using his lance he called for help. Vainly the other men advised him to retreat. "It is a brown walrus!" they exclaimed. "Auvokkaiok! Hold back!" When it was seen that the young man either would not or could not follow their advice, his only brother sprang forward and hurled the second harpoon. Almost immediately the furious creature turned upon him, and ripped him up, just as a wild boar might have done.

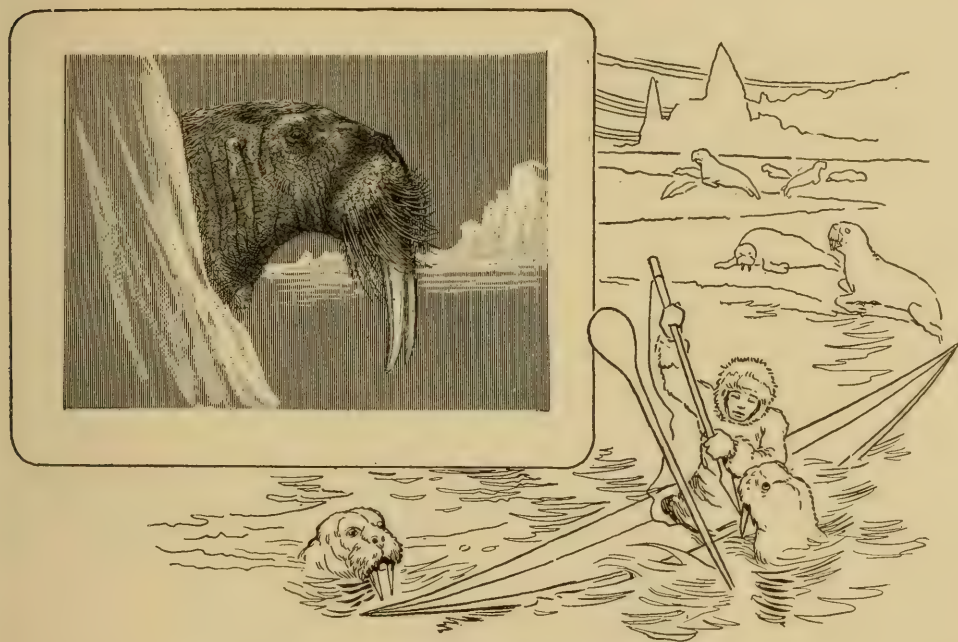
This ungainly creature, though so unsightly in features, is in reality quiet and inoffensive, unless attacked or roused in love-time, when woe betide those who measure his strength, especially if he reach his native watery element. Some travelers represent him as distrustful, ferocious and suspicious. They are very seldom met with singly, but often found in herds from a dozen to several hundreds. They crowd up from the water on to the rocks or ice one after the other, grunting and bellowing. The first arrival is no sooner composed in sleeping trim, than a second comes prodding and poking with its blunt tusks, forcing room for itself, while the first is urged farther from the water; the second in turn is similarly treated by the third; and so on, until numbers will lie packed close, heads and tails resting against and on each other, in the most convenient and friendly manner possible. There they sleep and snore to their hearts' content, but nevertheless, keep sentinels on guard in a singular fashion. Some one would seem to disturb another; then this fellow would raise his head listlessly, give a grunt and a poke to his nearest companion, who would rouse up a few minutes, also grunt, and pass the watchword to his neighbor, and so on through the herd, this disturbance always keeping some few on the alert.

When surprised on the ice the females first provide for the safety of their young ones by flinging them into the sea and conveying them to a secure distance; they then return with great rage to the place where they were attacked for the purpose of revenging any injury they may have received. They will sometimes attempt to fasten their teeth on the boats in order to sink them, or will rise under them in great numbers with the intention of

oversetting them; at the same time exhibiting all the marks of rage, roaring in a dreadful manner and gnashing their teeth with great violence.

They are strongly attached to each other, and will make every effort in their power, even to death, to liberate a harpooned companion. A wounded walrus has been known to sink beneath the surface of the ocean, rise suddenly again, and bring up with it multitudes of others, who have united in an attack on the boat from whence the insult came.

There is still much uncertainty as to the weight which these animals will



HEAD OF WALRUS, WITH ESQUIMEAU METHOD OF HUNTING.

attain. Trustworthy writers set down the weight of full-grown males at from 2,500 to 3,000 pounds, but as I have seen several that weighed over 4,000 pounds, I do not accept those figures. In regard to the size of the tusks of the Atlantic walrus, a fine pair once in my possession had a total length of twenty-four inches, of which probably about eighteen inches would have protruded from the jaw during life; the weight of each of these being four pounds. Others have, however, been obtained with a total length of thirty-one inches, and a weight of upwards of eight pounds apiece; but such

are, now at least, extremely rare. The tusks of females seldom exceed twenty inches in length. In the Pacific walrus the tusks are longer and thicker, and more convergent.

Up to the year 1890 they were still found in innumerable herds where the waters of the Arctic Sea join with those of Behring Strait, and also in Behring Sea; but since that date their diminution has been rapid. Between the years 1890 and 1900 close on 2,000,000 gallons of walrus-oil, and 400,000 pounds weight of ivory were obtained from these regions; thus representing the destruction of not far short of 100,000 animals.

Our party once captured a young walrus and, after a few days, it felt at home and became a favorite among the crew. It quickly formed an acquaintance with an Eskimo dog which was on board. They ate out of the same dish, although "Jamie," the walrus, took good care always to get the larger share. Whenever the dog went to his barrel to sleep, "Jamie" bundled right on top of him, and as doggie rebelled against such a bed-fellow, it usually ended in "Jamie" having it all to himself. He seemed to know his name well, for even if fast asleep, the instant one cried out "Jamie!" he would rouse up, gaze about, and grunt in reply. When alone on deck he appeared a picture of misery, endeavoring to make his way down "tween deck" after the men. If the cabin door were open he at once waddled in, laid himself before the stove and went to sleep; but if the cabin were empty he would not remain a moment. After being on board four months, he fell ill and died. The expression of this creature's countenance during his sickness was for sympathy from any one who came near. He took his medicine to the last, and when his dead body was thrown into the ocean, regret was felt by all on board. Even the dog mourned the loss of his strange companion.

The walrus is found in vast herds, which frequent the coasts of the Arctic and Antarctic regions, and which congregate in such numbers that their united roarings have often given timely warning to the fog-bewildered sailors, and acquainted them with the near proximity of shore. These herds present a curious sight, as the huge, clumsy animals are ever in movement, rolling and tumbling over each other in a strange fashion, and constantly uttering their hoarse bellowings.

The movements of the walrus when on land are of a very clumsy character, as might be supposed from the huge, unwieldy body of the animal, and the evident insufficiency of the limbs to urge the weighty body forward with any speed. When this creature is hurried or alarmed, it contrives to

get over the ground at a pace that, although not very rapid, is yet wonderfully so when the size of the animal is taken into account.

The movement is a mixture of jerks and leaps, and the walrus is further aided in its progress by the tusks. Should it be attacked, and its retreat cut off, the walrus advances fiercely upon its enemy, striking from side to side with its long tusks, and endeavoring to force a passage into the sea. If it should be successful in its attempt, it hurries to the water's edge, lowers its head, and rolls unceremoniously into the sea, where it is in comparative safety.



WALRUSES AND THEIR HABITS.

The walrus is killed when on land or ice either by means of long lances, or with rifles; while when at sea it is chased with special boats and harpooned. Enormous numbers of these animals were killed in the Magdalen Islands, in the Gulf of St. Lawrence, in the sixteenth and seventeenth centuries; but one instance of an enormous destruction of these animals may be referred to in greater detail. This occurred in the summer of 1882, on Thousand Island, lying off the southwest coast of Spitzbergen. Here two small sloops, sailing in company, approached the island, and soon discov-

ered a herd of walruses, numbering, as they calculated, from three to four thousand, reposing upon it. Four boats' crews, or sixteen men, proceeded to the attack with spears. One great mass of walruses lay in a small sandy bay, with rocks inclosing it on each side, and on a little mossy flat above the bay, but to which the bay formed the only convenient access for such unwieldy animals. A great many hundreds lay on other parts of the island at a little distance. The boats landed a little way off, so as not to frighten them, and the sixteen men, creeping along shore, got between the sea and the bay, full of walruses before mentioned, and immediately commenced stabbing the animals next them. The walrus, although so active and fierce in water, is very unwieldy and helpless on shore, and those in front soon succumbed to the lances of their assailants; the passage to the shore soon got so blocked up with the dead and dying that the unfortunate wretches could not pass over, and were in a manner barricaded by a wall of carcasses. The slaughter went on until the men were drenched with blood and thoroughly exhausted, while their lances became so blunt as to be useless. After returning to the ship to refresh themselves and grind their lances, the work of destruction was, however, resumed, and did not cease until upwards of nine hundred animals had been slain. Even then, however, so sluggish and lethargic were the walruses, that several hundreds were still lying on adjacent parts of the island. When I visited the spot six years later the carcasses were still lying as they fell, in some instances two or three feet deep, and the stench from them was perceptible for miles out at sea. The worst feature of this great slaughter was, indeed, the circumstance that the perpetrators, owing to the size of their vessels, were only able to carry away a small proportion of their victims.



THE STORY OF THE MOLE.

One morning, after a rain, I traced the fresh passageway of a mole for one hundred yards. The little animal had made this gallery in one night.

I was impressed with the enormous amount of work such a small animal could perform, and I made some figures in comparison with the labor of a man. My figures showed, that in proportion to size, a man would have to dig in a single night a tunnel seven miles long and of sufficient size to easily admit his body in order to perform equivalent work to this mole. I think, therefore, that I am right in the conclusion that the mole is the most indefatigable worker of the burrowing animals to be found in the United States.

Æsop in his fables makes frequent reference to the mole, but he was not a close student of its habits, for he maligned the little creature by saying it had no eyes and that it had been condemned to spend its life under ground. The mole does live underground, but does so from choice, and so far from being a miserable animal, it seems to enjoy its life quite as much as any other creature. It is beautifully fitted for the station which it fills, and would be unhappy if removed from its accustomed damp and darkness into warmth and light.

The eyes of the mole are very small, in order to prevent them from being injured by the earth through which the animal makes its way; indeed larger eyes would be useless underground. When, however, the mole requires to use its eyes, it can bring them forward from the mass of fur which conceals and protects them when not in use. The acute ears and delicate sense of smell in the meantime supply the place of eyes. Its fur is very fine, soft, capable of turning in any direction, and will not retain a particle of mold.

But the most extraordinary part of the mole is the paw or hand with which it digs. The two fore-paws are composed of five fingers, armed with sharp, strong nails, in order to scrape up the earth; and to prevent the accumulated mold from impeding the mole's progress, the hands are turned outwardly, so as to throw the earth out of its way.

Although each mole has its own hunting ground, yet there are mostly high roads which connect the different hunting grounds with each other, and which are used by many individuals in common, the only precaution taken being, that if two moles should happen to meet, the weaker immediately retreats into one of the numerous side galleries which open from the high road, and permits its aristocratical neighbor to pass.

The common web-footed mole doubtless received its name on account of its webbed hind-feet, which led to the very natural inference that it was a swimming animal. But this is a complete misnomer, for not only is this mole not known voluntarily to swim, but in the selection of its haunts it shows no preference for the vicinity of water, but manifests rather a contrary tendency. Its home is underground, and its entire life is spent beneath the surface. The nest of this mole is commonly half a foot or more below the surface, and from it several passages lead away in the direction of its favorite foraging-grounds. These primary passages gradually approach the surface, and finally become continuous with, or open into, an ever-increasing multitude of tortuous galleries, which wind about in every direction, and sometimes come so near the surface as barely to escape opening upon it, while at other times they are several inches deep. Along the most superficial of these horizontal burrows the earth is actually thrown up in the form of long ridges, by which the animal's progress can be traced. The distance that they can thus travel in a given time is almost incredible.

The dwelling place is usually placed near a hillock or between trees and consists of a central chamber with passages conducting to two circular galleries placed one above another. The higher of these two galleries has

a smaller diameter than the lower one. From the larger lower gallery there are given off several diverging runs, one of which is larger than either of the others, and is known as the main run, being the one which alone leads to the burrows driven in various directions for the purpose of procuring food. These burrows, or runs, except when so close to the surface as to allow of the earth being raised directly upwards in the form of a ridge showing their course, are marked at intervals by the well-known "mole-hills," which are mounds of loose earth pushed up from below, and not containing any internal chamber or passages.

Since the voracity of the mole is proverbial, and its food consists exclu-



THE MÔLE AND ITS BURROW.

sively of earth-worms, insects, and their larvæ, its visits ought to be welcomed alike by the farmer and the gardener. As a matter of fact, however, the mole has an awkward habit of driving its tunnels below the drilled rows of young farm and garden crops, by which not only are the roots of the plants disturbed, but the whole row may be dried up. Moreover, it appears pretty certain that field moles will take advantage of runs driven in such localities as convenient points from which to make inroads on the sprouting seeds or the roots of the young plants. Then, again, in addition to the unsightliness of a host of mole-hills in a garden, such elevations are

inconvenient in a field of standing grass, as they impede the process of mowing. From these and other circumstances, farmers and gardeners generally unite in a war of extermination against the mole, although there can be no doubt but that in many respects its visits are a distinct advantage to its destroyers.

The golden or Cape moles are so different from all others of this group that they are referred to a distinct family. They are entirely confined to South Africa, where they are represented by about seven species, and are commonly termed moles by the colonists.

In appearance these animals have some resemblance to the moles, but they have shorter and thicker bodies, with a deeper and blunter snout. The whole form is, however, admirably adapted for tunneling through the ground; since the eyes are totally covered beneath the hairy skin, and the minute ears are deeply buried in the fur. While the hind-feet retain a normal form, the fore-feet have been specially modified for the purpose of digging, having only four toes, of which the two central ones are furnished with enormous triangular claws of great power. The golden moles derive both their popular and scientific names from the brilliant metallic luster of the fur, which shows various tints of green, violet, or golden bronze; the brilliancy of these metallic hues being much intensified when the skin is immersed in spirit.

The runs are made so near the surface of the ground that the earth is raised above the tunnel, which can accordingly be followed with ease in all directions. When one of the moles is seen to be at work, owing to the movements of the soil, it can readily be thrown up on to the surface by the aid of a stick or spade. The food of the golden moles consists mainly of earth-worms.



STORY OF THE PANGOLIN.

In Africa, south of the Sahara desert and in some parts of India, I have often come across an animal which always made me think of a huge pine cone supplied with a head and legs. This animal is known as the pangolin, which feeds upon ants, although belonging to a different family from the true ant-eaters. The whole upper surface of the body, the sides and the tail are covered with large overlapping horny scales. The limbs are short, with five toes. Its long worm-like tongue is capable of being extended a great distance from its mouth.

The largest pangolins reach a length of six feet. They are burrowing animals, and are only abroad at night. They can roll themselves in a ball like the other ant-eaters, and when they are thus rolled up their muscular strength is something enormous.

Asia is inhabited by three species of the family, namely, the Indian pangolin, confined to India and Ceylon; the Chinese pangolin, ranging from Nipal and Assam to China; and the Malayan pangolin, inhabiting the regions to the westward of the Bay of Bengal as far as Celebes, and also occurring in North-Eastern India.

The habits of all the three kinds are similar, although the Malayan species is probably less of a burrower than the others. The Indian pangolin dwells either among the crevices and clefts of rocks, or in burrows of its own construction; such burrows extending to a depth of from eight to twelve feet below the surface, and ending in a large chamber, which may be as much as six feet in diameter. Here a pair of these animals take up their abode, and in the winter or early spring give birth to their young. The young, which are one or two in number, are covered with soft scales at birth, which harden on the second day, but it does not appear to be ascertained whether they are born blind. When inhabited, the entrance to the burrow is stopped with earth; and it is rarely that its occupants are seen abroad after sunrise. The food



THE PANGOLIN.

consists chiefly of termites; the pangolin tearing open the nests of these insects with its powerful front claws, and thrusting its long glutinous tongue into their runs. The tongue is rapidly withdrawn with a swarm of the white ants clinging to it. In captivity pangolins will readily eat finely-chopped raw meat, hard-boiled eggs, and rice. Their stomachs have a somewhat gizzard-like structure; and frequently contain a few small pebbles, probably introduced to aid in tritulating the food. In captivity pangolins drink freely by rapidly extending and withdrawing the tongue. I doubt whether this habit is natural to them, as they are often found in places where there is no water. When irritated, pangolins will give vent to a hissing sound, but at other times they are silent.



STORY OF THE OPOSSUM.

A favorite sport in the southern part of the United States is "possum hunting," and is particularly popular with the colored population.

The time to hunt opossums is a bright moonlight night, and the best locality, a marsh or swamp where persimmon trees grow. The hunter will need only a good dog. As soon as the opossum finds out that a dog is on its trail it takes to the trees, and usually it is but a short time after striking a trail until the 'possum is "treed." Then it can be easily secured by taking hold of its tail, which is prehensile, and which the animal wraps around any object that touches it.

The flesh of the opossum is coarse and fat, but it is esteemed a great delicacy by the negroes.

There are about twenty-four varieties of the opossum, but only one of them is found in the northern half of America, all the others being confined to the southern half.

All the opossums, with the exception of the water-opossum, inhabit trees. They spend the day concealed among the foliage and are active throughout the night. The opossums take the place in America of the insect eating

animals of the Old World. They are naturally forest-loving animals; but a few are found on the pampas of Argentina, where they have adapted themselves to a ground life. In those species in which the pouch is poorly developed or wanting, the young are carried upon the back of their female parent, where they maintain their position by curling their tails round that of their mother, which is bent forward for that purpose.

On first catching sight of the opossum, you would think it stupid; but a very short observation convinces you that it is as full of tricks as the most cunning of foxes. One of its favorite devices, when it is surprised by the hunter, and finds escape impossible, is to fall to the ground, apparently lifeless, as if mortally wounded by its pursuer's gun. If you think it really dead, and turn aside your gaze, or throw it carelessly into your game-bag, it watches for a favorable opportunity, and is off and away when, of course, you are least prepared. In this stratagem has originated the popular phrase of "playing 'possum." Touch its head ever so lightly—so lightly that the touch would not kill a fly—and it immediately stretches out its limbs as stiff as a corpse; in a word it "plays 'possum." In this situation you may torture it, cut its skin, almost flay it, and it will not move a single muscle. Its eyes grow dull and glazed as if covered with a film, for it has no eyelids to protect its organs of sight. It will allow you even to throw it to your dogs, so complete is its acting, and so consummate its power of deception; but forget it only for a moment, and it opens its dull, glazed eyes, seizes its opportunity, and turns tail in the most rapid manner.

In size the opossum equals a small dog, measuring about three and a quarter feet in total length; the head and body measuring twenty-four inches, and the tail sixteen. Its fur is of a grayish-white color, slightly shaded with yellow, and varied here and there by long white hairs with brownish tips. On the limbs these hairs are so numerous that the whole fur assumes a brown hue. It feeds upon young rabbits, mice, rats, reptiles of various kinds, insects, eggs, and young birds; and occasionally it makes a descent upon the poultry-yard, and regales itself with fowl or chicken. In these depredations it displays an astonishing amount of cunning and perseverance.

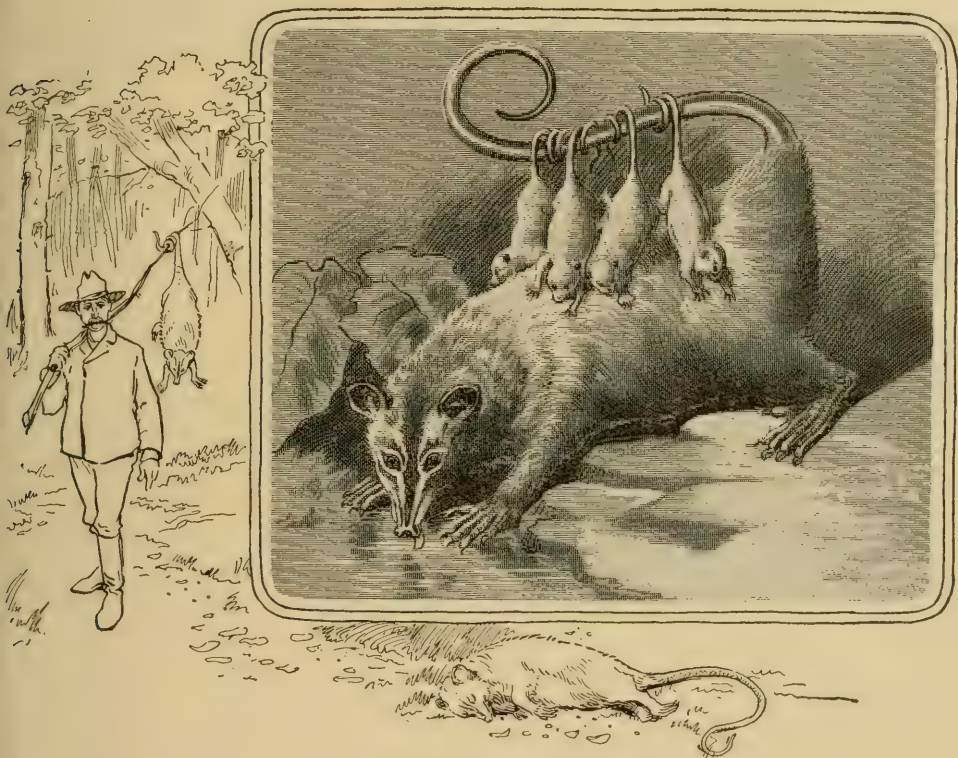
In Merian's opossum there is no true pouch, and the place of that curious structure is only indicated by a fold of skin, so that during the infancy of its young the mother is obliged to have recourse to that singular custom, which has gained for it the title of "*dorsigerus*," or back-bearing.

At a very early age the young opossums are shifted to the back of their mother, where they cling tightly to her fur with their little hand-like feet, and

further secure themselves by twining their own tails round that of the parent.

Many other species of opossums are in the habit of carrying their young upon their backs, even though they may be furnished with a well-developed pouch, but in the pouchless opossums the young are placed upon the back at a very early age, and are retained there for a considerable period.

The fore feet are armed with strong and sharp claws, which can find their way into every little crevice in the bark, or make one for themselves if neces-



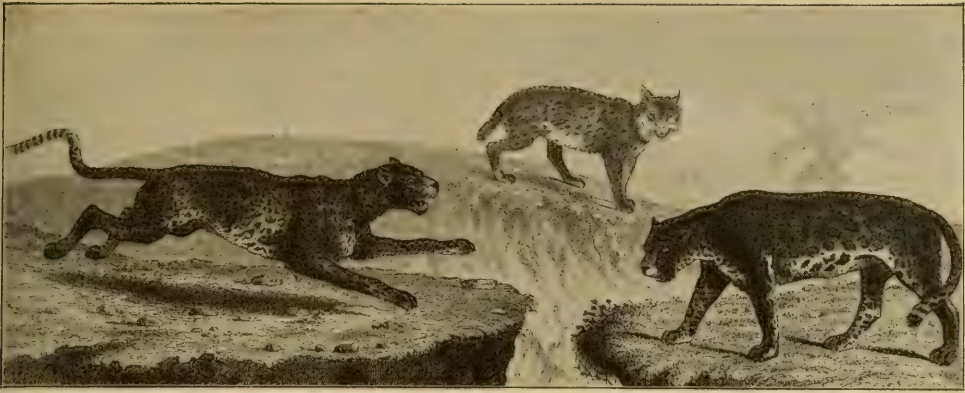
MERIAN'S OPOSSUM.

sary, and so obtain a firm foothold even upon an upright tree-trunk. The tail is wonderfully prehensile, and is so strong that the opossum can curl it tightly round a branch and hang suspended by its aid alone, even when its young ones are clinging to its body, and so adding largely to its weight. When plucking fruit from a tree, the opossum may often be seen thus suspended from the bough above the clusters which it is attacking, so that the fore paws are left free to gather the fruit and to carry it to the mouth.

The philander and the woolly opossum have a brown streak running down the middle of the face.

The murine opossum which ranges from Central Mexico to Brazil is no larger than a common mouse, and wears a coat of soft red fur. It lives entirely upon insects.

The water-opossum or yapock differs from all other members of the family in having the hind-toes webbed, and the presence of a large growth on the outer side of each fore-foot, giving the appearance of a sixth claw. This animal ranges from Guatemala to Brazil, and is distinguished by its peculiar color and love of water. The fur is short and close, and the long tail naked and scaly for the greater part of its length. The head and body measure about fourteen inches in length, and the tail about fifteen and a half inches. The ground-color of the fur is light gray, upon which there is a blackish brown stripe running down the middle of the back, and expanding into large blotches on the shoulders, the middle of the back, the loins, and rump. The face has also blackish markings, with an imperfect whitish crescent above the eyes; while there is a certain amount of dark tint on the outer surfaces of the limbs, the under-parts being pure white. The female possesses a complete pouch. In habits the yapock closely resembles an otter, to which group of animals it was, indeed, referred by the earlier naturalists. Its food consists of small fish and other water animals.



STORY OF THE CAFFRE CAT.

With the caffre, or, as it is frequently termed, the Egyptian cat, we have a species which is regarded as the parent stock from which the domestic cat has sprung.

The caffre cat is about the size of a large domestic cat, and is generally of a yellowish color, darker on the back, and paler on the under-parts. The body is marked with faint pale stripes, which assume, however, on the limbs the form of distinct dark horizontal bands; and the tail, which is relatively long, is also more or less distinctly ringed towards its tip, where it is completely black. The sides of the face are marked by two horizontal streaks.

The caffre cat is found throughout Africa, from the Cape of Algiers and Egypt, and also extending into Southwestern Asia in Syria and Arabia. In past times it also ranged into Southeastern Europe. At the period when the caffre cat lived in Gibraltar, Spain was doubtless connected by land with Africa. These cats were held sacred by the ancient Egyptians, and enormous numbers of their bodies were embalmed and preserved in tombs and pits.

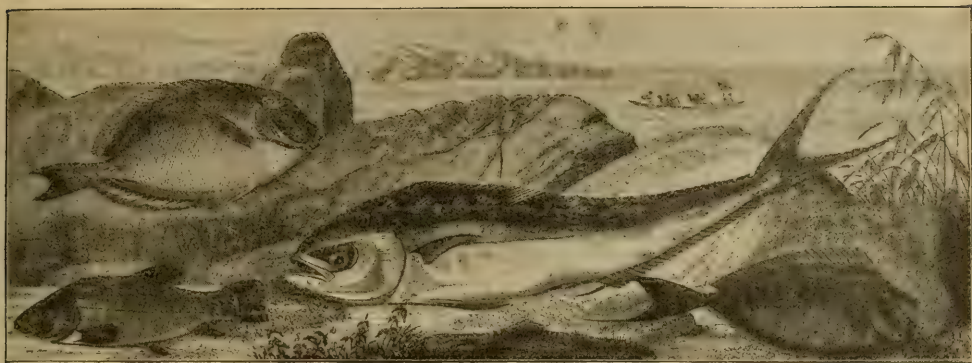
Darwin considered that the origin of the domestic cat could not be determined with certainty; and concluded by remarking that whether domestic cats have descended from several distinct species, or have only been modified by occasional crosses, their fertility, so far as is known, is unimpaired,

That the ancient Egyptians had succeeded in taming thoroughly the cats of which the mummified bodies are found in large numbers is perfectly well ascertained. This is indeed demonstrated by a painting in the British Museum, representing a fowling scene. It appears to have been the custom for the fowler to enter upon such expeditions accompanied by some of the female members of his family. Embarking on board a boat, with a few decoy-birds and a trained cat, they proceeded to such parts of the river as were fringed with dense masses of the tall papyrus-reed. Waterfowl of various species



THE CAFFRE CAT, WORSHIPED BY EGYPTIANS.

swarmed in these rushy covers; and, by the number of nests with eggs and young usually represented, we are doubtless to infer that the possession of this sort of stock was no less desired than that of the birds themselves. The cat, strange as it appears, was certainly taught to seize upon the birds. It is probable also that the repugnance of this animal to wet her feet having been overcome by training, she was accustomed to fetch such birds as fell into the water. It is interesting to find the cat domesticated at so early a period,



THE STORY OF THE SHREW.

The shrew family has so many varieties that I will have to confine myself to some of the most interesting and important ones. These elegant little creatures are often mistaken for mice, in fact, they are commonly called shrew mice, although they belong to the family of insect-eating animals, and resemble a mole more than they do a mouse.

With the exception of a few varieties which have taken to a life in the water, the shrews live on the land and are active only at night. They are all covered with fur, generally remarkable for its softness; the head is long, with a sharply pointed snout projecting far in advance of the tip of the lower jaw; their eyes are extremely small and bead-like. They are to be met with throughout the whole of the temperate and tropical regions of Europe, Asia, Africa and North America, as well as on many of the adjacent islands. From their obscure and retiring habits the shrews are difficult of observation; their long and pointed snout, their elastic form, and short and velvety coat enable them to pass through the closest herbage, or beneath the carpets of dry leaves in the coppice and woodland, in which places, as well as in the open fields, whether cultivated or in pasture, they seek their food. But they are not confined to such places, however, as with their relatives, the water shrews, they are often met with in marshy and fen districts. On the other hand, one of the Indian shrews constantly frequents dwelling-houses.

The common shrews are known by their red teeth, the large size of their

ears, and their long tails. The red-toothed shrews are quite unknown in Africa south of the Sahara, and they are only represented in India and the rest of the Oriental region by a single variety.

The common shrew, found abundantly in the British Islands, measures just short of three inches in length, exclusive of the tail, and is usually of a reddish mouse-color, paler beneath, with the tail rather shorter than the body. There is, however, considerable individual variation in color, specimens being sometimes found banded with white. Its food is insects, worms, snails and slugs.

Shrews are so given to fighting that two are rarely seen together except when in a fight, and if two or more are confined together, the strongest will soon kill the others.

The strong scent of the shrew serves to protect it against many foes, but it is not strong enough to disgust the owl, which bird kills and devours shrews with great relish. A cat will kill a shrew but will not eat it.

The varieties of shrews found in the United States are among the smallest members of the family. They spend less time underground, but when they move about on the surface they always seek the cover of fallen leaves and twigs.

The naturalist knows that however cautiously he may move his footsteps put to flight many forms of life that will reappear as soon as quiet is restored; therefore he often waits and watches and stops to listen and observe. While thus occupied, it sometimes happens that a slight rustling reaches his ears. There is no wind, but his eyes rest upon a fallen leaf that seems to move. Presently another stirs, and perhaps a third turns completely over. Then something like the shadow of an embryo mouse appears and vanishes before the eye can catch its perfect image. Anon the restless phantom flits across an open space, leaving no trace behind. But a charge of fine shot dropped with quick aim upon the next leaf that moves will usually solve the mystery. The author of the perplexing commotion is found to be a curious sharp-nosed creature, no bigger than one's little finger, and weighing hardly more than half a drachm. Its ceaseless activity, and the rapidity with which it darts from place to place, are truly astonishing, and rarely permit the observer a correct impression of its form. Whenever a tree or a large limb falls to the ground these shrews soon find it, examining every part with great care, and if a knot-hole or crevice is detected, leading to a cavity within, they are pretty sure to enter, carry in materials for a nest, and take formal possession. Not only are these agile and restless little shrews voracious and almost insati-



WATER SHREWS.

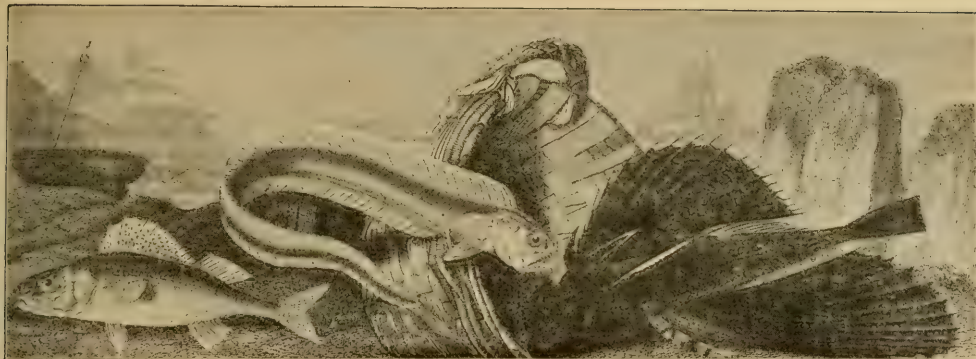
able, consuming tremendous quantities of raw meat and insects with great eagerness, but they are veritable cannibals withal, and will even slay and devour their own kind.

The marsh-shrew from the Rocky Mountains, together with the swimming shrew from one of the Aleutian Islands, differ from the other members in having their feet provided with fringes of long hair.

Another variety of the red-toothed family is the short-tailed shrew found in the Adirondack Mountains.

The water-shrew, although unknown in Ireland, is found all over England and the south of Scotland. It likewise occurs over a large area of continental Europe, from whence it extends eastwards into Asia as far as the Atlas range. In the water these graceful little creatures are as much at home as water-voles or beavers; and in clear streams they may be observed during the day diving or running along the bottom, and turning over the pebbles with their sharp noses in search of fresh-water shrimps, which appear to constitute their favorite food. In addition, the water-shrew devours many kinds of water insects or their larvæ, while it is also probable that it likewise preys on the spawn or fry of minnows and other small fish. There are, moreover, several instances on record where water-shrews have been found feeding on the flesh of larger animals, which they have found dead. The burrows of the water-shrew are made along the banks of ponds and streams.

The largest of the shrews is plentiful in India and is known as the musk-shrew, of which there are two varieties, brown and gray. The brown musk-shrew is found as a rule in woods (although it will occasionally enter buildings), the gray musk-shrew generally haunts human habitations. The gray musk-shrew is a common visitor to Indian houses. During the day it lies concealed in holes and drains, issuing forth at night to hunt over the floors of rooms for cockroaches and other insects; while thus engaged it utters from time to time a short, sharp squeak. In respect of its insect-eating habits, this musk-shrew is a benefactor to mankind; but these benefits are accompanied by the drawback that various articles may be so impregnated with the musky secretion of the animal as to become utterly useless. There has, however, been much exaggeration as to the penetrating power of this scent, the well-known but absurd story that wine or beer becomes impregnated with a musky flavor from the circumstance of one of these shrews having run over the outside of the bottle containing such liquor, being a case in point,



THE STORY OF THE TENREC.

There lives in Madagascar an insect-eating animal which has many of the characteristics of the hedgehog. The name tenrec is given the group, which comprises several species. They are defended with spines, and can roll themselves into a ball as the hedgehog does. I have watched the creature defend itself against the attack of a dog and do it so successfully that the dog retired howling with pain.

These animals are a great pest to the agriculturists of Madagascar, owing to the damage they inflict on the rice crops by burrowing in the earth beneath the young plants in search of worms and insects.

They pass one-half of the year in a state of torpidity. About May or June they dig themselves holes, in which they sleep until December, with their heads comfortably tucked away between the hind legs. Their burrows are generally betrayed by the presence of a small heap of earth or moss thrown up at the entrance. The animals at this time are very fat, and are regarded as great delicacies by the natives of Madagascar. The inhabitants hunt the tenrecs with dogs, trained expressly for the purpose. They live chiefly in the mountains, in places covered with mosses, ferns and bushes. Their food consists principally of earthworms, which they rout out by means of their feet and pointed snouts, using the latter after the fashion of a pig. Insects also form a part of their diet; and like the hedgehogs, they feed upon certain

fruits and roots. In captivity they will eat raw meat, and are also said to be fond of bananas. They sleep nearly all the day, and come forth in full activity only at night.

The true tenrecs have a body much longer than the hedge-hogs, and their bristles are less rigid, the spines being covered with soft, silky hair. The head is shaped like that of the pouched animals. It is found not only



THE TENREC AND ITS HABITS.

in Madagascar, but also in the islands of Bourbon and Maurice, but it was probably carried to the latter island by the colonists. It is tailless, about twelve inches long, and of a fawn color. The second species has rather strong prickles, and is of a grayish-black color.

The spines of the tenrec are like stiff pointed bristles, and are by no means so strong as those of the hedgehog.



THE STORY OF THE RABBIT.

From the day of its birth till the day of its death a rabbit spends most of its time dodging or fighting the enemies that seek its life. All the larger birds of prey are constantly on the lookout for rabbits, and were it not for the tangled vines and the briar hedges, bunny would find it more difficult to escape than he does with their friendly aid. Almost every four-footed meat-eating animal is a foe to the rabbit—minks, weasels, skunks, wolves, foxes, cats and dogs. Certain snakes will eat rabbits, and are particularly fond of young rabbits. Against all these enemies on land and in air, and against the arch-enemy of all animal life, the man with a gun, Bunny is required to be constantly on guard. Hence he leads an active life, full of peril and hair-breadth escapes.

He has two means of protecting himself—one is to kick out hard and strong with his hind legs, and he kills many snakes in this way, and the other is to run. Usually he runs. We malign the poor creature by stigmatizing it as cowardly or timid, because it runs away when it is hunted. Half a dozen men, together with a pack of dogs, band together in pursuit of one defenseless hare, which is likely to run away under such circumstances. There is scarcely any animal, from an elephant or lion downward, that would not run away in like manner; and it is very unfair to brand the poor rabbit with an offensive epithet because it does not attempt to fight men and a pack of hounds.

A farmer had captured a young rabbit in a furrow, and was proceeding to mark it by notching its ears, when he was interrupted in his work by the mother, which flew at him with singular courage, and struck so fiercely with her feet that she tore his hands rather severely. Finding that she could not release her child, she stood within a few feet of the captor, and waited patiently until he liberated the little rabbit, with which she went off.

The very long and powerful hind-legs of the rabbit enable it to make prodigious bounds, and to cover a considerable space of ground at every leap. The hinder limbs are, indeed, of such great proportionate length that the animal does not walk, but proceeds by a series of hops or leaps.

Mark Twain gives a graphic account of the jack-rabbit, one of the members of the hare family, in "Roughing It." "As the sun was going down," he says, "we saw the first specimen of an animal known familiarly over two thousand miles of mountain and desert—from Kansas clear to the Pacific Ocean—as the 'jackass-rabbit.' He is well named. He is just like any other rabbit, except that he is from one-third to twice as large, has longer legs in proportion to his size, and has the most preposterous ears that ever were mounted on any creature but a jackass.

"When he is sitting quiet, thinking about his sins, or is absent-minded, or unapprehensive of danger, his majestic ears project above him conspicuously; but the breaking of a twig will scare him nearly to death, and then he tilts his ears back gently, and starts for home. All you can see then, for the next minute, is his long form stretched out straight, and 'streaking it' through the low sage-bushes, head erect, eyes right, and ears just canted to the rear, but showing you where the animal is, just the same as if he carried a jib.

"Now and then he makes a marvelous spring with his long hind-legs, high over the stunted sage-bushes, and scores a leap that would make a horse envious. Presently he comes down to a long graceful 'lope,' and shortly he mysteriously disappears. He has crouched behind a sage-bush and will sit there and listen and tremble until you get within six feet of him, when he will get under way again.

"But one must shoot at the creature once, if he wishes to see him throw his heart into his heels, and do the best he knows how. He is frightened clear through now, and he lays his long ears down on his back, straightens himself out like a yardstick every spring he makes, and scatters miles behind him with an easy indifference that is enchanting.

"Our party made this specimen 'bump himself,' as the conductor said.

The secretary started him with a shot from the Colt; I commenced spitting at him with my weapon; and all at the same instant old 'Allen's' whole broadside let go with a rattling crash. He frantically dropped his ears, set up his tail, and left for San Francisco at lightning speed. Long after he was out of sight we could hear him whiz."

The jackass-rabbit's ears are, in fact, much longer than his head. Flapping among the stunted vegetation of the plains, as their owner covers the country with a series of prodigious bounds, these ears might be, and in fact often are, mistaken for a bird in flight, skimming along near the surface of the ground. When frightened, however, the Texas hare, as it is sometimes called, lays the ears close back, brings its body into the form of a



A JACK RABBIT IN THE SAGE BRUSH.

semicircle, and clears the flora of its habitat with flying leaps that bear it in safety from the wolf, or even from the swifter hawk.

Its speed, which is unparalleled among hares, is its only means of safety, as it seeks no other hiding place or protection than a little scratch in the earth, or the shade afforded by a sage-bush.

With the exception of one remarkable Indian species all the members of the family are very much alike in appearance in coloration; the usual tint of the fur on the upper parts being a mixture of gray and reddish brown, although in some cases the red, and in others the gray, tends to predominate. This coloration harmonizes well with the general tint of

the open country on which most of the species dwell. A noteworthy feature is the pure white of the under surface of the upturned tail. This, in the case of the rabbit at least, serves the purpose of a guiding signal to other individuals in the presence of danger, so that when the leader of a flock is in full retreat towards its hole, the remainder at once see in which direction to follow.

The mountain or Alpine hare is a species with a very wide distribution,



SCENES IN THE LIFE OF A COTTON-TAIL RABBIT, AND A JACK-RABBIT CHASE.

ranging over the greater part of Northern Europe and Asia, from Ireland in the west to Japan in the east, and also met with in the Alps, the Pyrenees, and the Caucasus. It is represented by a variety known as the Polar hare in Arctic America, which extends as far south as Nova Scotia. In the British Isles this species is not met with except in Scotland and Ireland; and in the former country is commonly termed the blue hare.

The mountain hare is intermediate in size between the common hare and the rabbit; and has a relatively smaller and more rounded head, with shorter ears, hind legs, and tail than the former. Throughout the year in Ireland and the south of Sweden, and during summer in the greater part of the rest of its habitat, the general color of the fur is light gray; the tips of the ears being black. With the commencement of winter, however, except in the regions named, the fur gradually becomes more and more flaked with white, until at length it assumes a uniformly white hue, save on the black tips of the ears.

The rabbit has been introduced by human agency into several countries beyond Europe, where it has flourished and multiplied to a degree beyond conception—so much so, indeed, that in Australia and New Zealand these animals have become a perfect pest and a serious hindrance to agriculture. Rabbits were first introduced at the period of highest prosperity of Australia and New South Wales by a patriotic gentlemen who thought it would be a good thing

to import a few rabbits into the colony, as they would serve for food and for sport. He accordingly imported three couple of rabbits, and they were turned loose. It was not long before it was found that the district in question had been transformed into a gigantic rabbit warren. Indeed it was discovered that a single pair of rabbits, under favorable circumstances, would in three years have a progeny numbering 13,718,000. The inhabitants of the colony soon found that the rabbits were



A BABY JACK-RABBIT.

a plague, for they devoured the grass, which was needed for the sheep, the bark of trees, and every kind of fruit and vegetables, until the prospect of the colony became a very serious matter, and ruin seemed inevitable. In New South Wales upwards of fifteen million rabbit skins have been exported in a single year; while in the thirteen years ending with 1899 no less than thirty-nine millions were accounted for in Victoria alone. To prevent the increase of these rodents, the introduction of weasels, stoats, mungooses, etc., has been tried; but it has been found that these carnivores neglected the rabbits and took to feeding on poultry, and thus became as great a nuisance as the animals they were intended to destroy. The attempt to kill them off by the introduction of an epidemic disease has also failed. In order to protect such portions of the country as are still free from rabbits fences of wire-netting have been erected; one of these fences erected by the Government of Victoria extending for a distance of upwards of one hundred and fifty geographical miles.



STORY OF THE CHAMOIS.

The chamois is a strongly-built animal, with relatively long and stout limbs, and a very short stumpy tail; in height it stands about two feet at the withers. It is closely akin to the antelope.

The general notion is that the chamois is an essentially Alpine animal; that is, one frequenting the glaciers and snowy peaks above the forest-level. This, however, is a mistaken idea; the truth being that the chamois is really a forest-dwelling animal, and that most individuals of the species live from year's end to year's end within the limits of the forest. A certain number during the summer always leave, however, the main flock, to take up their abode for a period of weeks or months among the glaciers and snow-fields above the upper limits of forests. These adventurous individuals are known to the hunters as glacier-chamois, in contradistinction to wood-chamois; but a short spell of severe weather is sufficient to drive even these back to the shelter of the forests. The favorite haunts of the chamois are the western and north-western slopes of the Alps in summer; while in the winter they prefer the spots with an easterly or southerly aspect.

Chamois associate together in herds of fifteen or twenty individuals. They repose during the night, but with the first glimmer of dawn commence feeding; towards the middle of the day they again seek the shelter of rocks or trees, where they lie in the shade till evening, when they once more issue

forth to feed. Their chief food consists of lichens and the scanty mountain herbage.

All who have seen chamois in their native haunts are agreed as to their extreme agility and wariness; and their sure-footedness has become proverbial. When alarmed, they utter a shrill whistling sound, which at once sets the whole flock in rapid motion. A chamois is able to stand on the summit of a pinnacle of rock with all its four feet gathered into a space of the size of a silver half dollar.

Their sight is very penetrating, and their sense of smelling and hearing is remarkably acute. When the wind blows in a proper direction, they are said to be able to scent a man at the distance of a mile or upwards. Their voice somewhat resembles that of a hoarse domestic goat; by means of this they are called together. When alarmed they adopt a different noise, and apprise each other by a kind of whistle. This the animal on watch continues as long as he can blow without taking breath; it is at first sharp, but flattens toward the conclusion. He then stops for a moment, looks round on all sides, and begins whistling afresh, which he continues from time to time. This is done with such force that the rocks and forests re-echo the sound.

His agitation is extreme. He strikes the earth with his feet. He leaps upon the highest stones he can find, again looks around, leaps from one place to another, and when he discovers anything seriously alarming flies off. This whistling is performed through the nostrils, and consists of a strong blowing, similar to the sound which a man may make by fixing his tongue to the palate, with his teeth nearly shut, his lips open and somewhat extended, and blowing long, and with great force.

In appearance the chamois is an attractive animal. The whole body is covered with long hair, hanging down over the sides, of a deep-brown color in winter and brownish fawn-color in summer, being in spring slightly mixed with gray; the head is of a very pale yellow or straw-color, with a dark-brown band on each side, passing from the root of the ears to the corners of the mouth, and encircling the eyes and base of the horns; the tail is short and black, and the edges of the hips and interior of the thighs and ears alone white. The face is straight, as in the goat; the ears small, erect, and pointed; and the chin without a beard. In old individuals, particularly during the severe colds of winter, the cheeks, chin, and throat turn white, and the breast and belly are at all times of a light silvery brown or yellow. Underneath the external covering there is a short, thick coat of fine wool, which lies close to the skin, and protects the animal from the rigors of the cold mountain

regions which it inhabits. The colors of both sexes are the same, but the females are rather smaller than the males, and have horns less abruptly hooked backward.

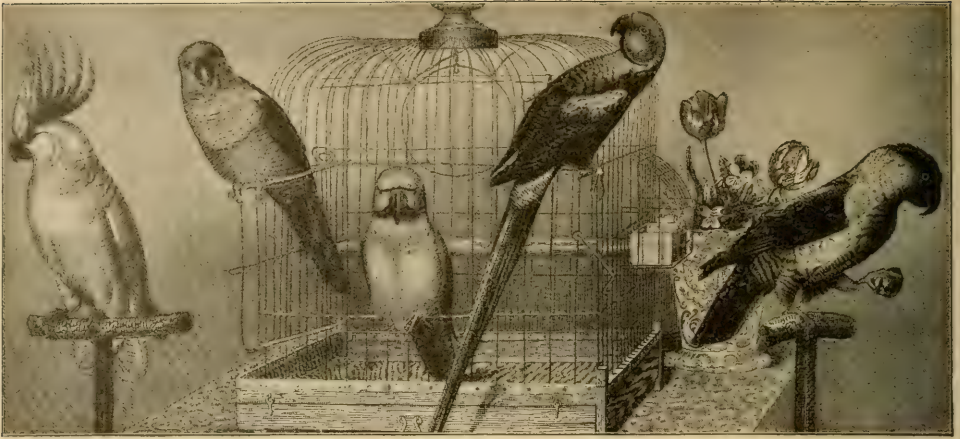
The food of the chamois consists of mountain herbs, flowers, and the tender shoots of trees and shrubs; it seldom drinks. Nothing can be more admirable than the agility with which it ascends and descends rocks apparently perpendicular. It does not descend at a single bound nor in a vertical



THE CHAMOIS AND ITS HABITS.

direction, but projecting itself obliquely or diagonally forward, striking the face of the rock three or four times with its feet for the purpose of renewing its force, or directing it more steadily to the point it aims at.

The chamois is found in all the high mountain-chains of Europe and western Asia, in the Pyrenees, the Alps, the Carpathian and Grecian mountains, the chains of Caucasus and Tauras, and probably it exists in other situations.



STORY OF THE DUCKBILL.

The duckbilled platypus is one of the most remarkable animals I have ever seen. Australia, where everything seems to be reversed, where the north wind is warm and the south wind cold, the thick end of the pear is next the stem, and the stone of a cherry grows outside, is the residence of this most extraordinary animal. When it was first introduced into Europe, it was fully believed to be the manufacture of some impostor, who with much ingenuity had fixed the beak of a duck into the head of some unknown animal. It will, however, be seen by the skull of the animal, that this duck-like beak really belongs to the animal, and is caused by a prolongation of some of the bones of the head.

In length the adult male duckbill measures from 18 to 20 inches from the tip of the beak to the end of the rather short tail. The muzzle is expanded and flattened, and has both the upper and lower jaws invested with a blackish naked beak not unlike that of a duck. This beak is bordered by a naked sensitive skin, forming a fold at the base of the snout, the nostrils being situated near its front end. The body is covered with short, close, and somewhat mole-like fur, including both longer hairs and a woolly under-fur; its usual color being deep brown, becoming paler underneath. The tail is broad and flattened, and has a coat of coarse hairs, which on the under side are

usually worn off by old individuals. The tongue is small, and the cheeks are provided with pouches for storing food. On the heel of the male is a long horny spur an inch long, curving upward and backward. In this spur is a canal connected with a gland on the leg which secretes a poisonous fluid.

The duckbill is restricted to Southern and Eastern Australia and Tasmania, where it is fairly common in places suited to its habits. Thoroughly aquatic in their habits, and exclusively frequenting fresh waters, duckbills



THE DUCKBILL AND ITS BURROW.

are remarkably shy creatures, and rarely seen, except at evening, when they come up to the top of the water, and look like so many black bottles floating on the surface,—sinking down immediately if alarmed. By quietly watching the stream in the evening they may be easily shot, and they will readily take a bait on a hook. Although mingling together when in the water, these animals live in pairs in the burrows constructed in the banks; their favorite haunts being where the streams expand into wide, still pools. In the banks of such

out of the way spots are constructed their burrows; each of which usually has one entrance opening beneath the water, and another above the water-level, hidden among the herbage growing on the bank. The burrow runs obliquely upwards from the water to a great distance—sometimes as much as fifty feet—into the bank; and ends in a chamber, lined with grass and other substances, where the young are produced.

Two eggs are laid at a time, enclosed in a strong, flexible, white shell, measuring about three-quarters of an inch in length, and two-thirds of that in diameter. They resemble the eggs of birds in the large size of their yolk, of which only a small portion goes to the formation of the embryo, while the remainder serves for its food. When first hatched, the young are blind and naked, with the beak very short, and its margins smooth and fleshy, thus forming a nearly circular mouth, well fitted to receive the milk ejected from the glands of the mother. The duckbill feeds on various small water animals, such as insects, shell fish and worms, which it obtains by probing with its beak in the mud and sand near the banks; the food being first stored in the large cheek-pouches, and afterwards devoured at leisure. The large front paws are the chief agents in swimming and diving. On land these creatures move somewhat awkwardly, in a shuffling manner; and when reposing in their nests curl themselves up in a ball-like fashion. The natives capture the duckbill, by digging holes with sticks into the burrow from the ground above at distances from one another, until they light upon the terminal chamber.



STORY OF THE PECCARY.

In South America I made the acquaintance of a gentleman who had a large plantation which had suffered much damage from the frequent visits of a herd of peccaries.

He finally located the sleeping place of the herd, and at his invitation I accompanied him upon a peccary shooting expedition. He chose a cloudy morning, with threatening rain, for on such days the peccary will not leave its lodgings unless compelled. Before we started a fine drizzle came on, which made the day all the better for our purpose. The peccary's mode of sleeping is peculiar. They usually frequent those heavy canebrakes, through which are scattered, at wide intervals, trees of enormous size and age. These, from their isolated condition, are most exposed to the fury of storms, and, therefore, most liable to be thrown down. We find their giant stems stretched here and there through the canebrakes, overgrown with the densest thickets of the cane, matted together by strong and thorny vines. In these old trees the peccaries find their favorite lodgings. Into one of these logs a drove of twenty or thirty of them will enter at night, each one backing in, so that the last one entering stands with his nose at the entrance. The planters, who dread them and hate them, as well on account of the ravages on their grain-crops which they commit, the frequent destruction or mutilation by them of their stock—their favorite dogs, and sometimes even their horses—

wage a unique warfare upon them, and it was upon such a mission that my friend and I set out.

Just before day we arrived at one of the big logs in which the peccaries had taken refuge. Concealing ourselves we waited in silence for the coming light.

Soon as the day opened, peering cautiously through the cane, we could perceive the protruded snout, and sharp, watchful eyes of the sentinel-peccary on duty, while his fellows behind him were asleep. Noiselessly the unerring rifle was raised, the ring of its explosion was heard, and, with a convulsive spring, the sentinel leapt forward out of the hole, and rolled in its death-struggle on the ground. Scarcely an instant passed before a low grunt was heard, and another pair of eyes were seen shining steadily in the place the other had just held. Not a sound was heard, not even a branch of the embowering cane stirred as I raised my rifle for the next shot. With steady nerve the piece was fired. Out sprang the second victim as the first had done; then another took its place, and so on to the third, fourth, fifth, and twentieth. By some carelessness my friend and I happened to make a stir in the cane around us, when out sprang the twenty-first with a short grunt without waiting to be shot this time, and followed by the whole herd, which was at once joined by a herd that came grunting and tearing from a similar hiding place. Both herds charged straight at us, and we took to our heels.

With foresight gained by experience my planter friend had selected a place of concealment near a forest of large trees. Toward this we ran, and succeeded in reaching the lower branches before the enraged animals arrived at the base. From this vantage point we finally succeeded in killing the remainder of the droves.

The peccary is both dreaded and hated by the South Americans, for it is so exceedingly ferocious, and so utterly devoid of all sense of fear, that it will always charge at any object that comes in its way; an elephant would not scare it, if an elephant were to be transported to South America. So it puts to flight those whom it attacks, and they fly before it in mixed fear and wrath against the pugnacious little animals which are pursuing them.

It is small, rarely exceeding eighteen inches in height, and yet is not less dreaded than the most savage wild boar would be. Its jaws are armed with tusks, like those of the boar, but they are straight instead of curved, are sharp at the edges, and, although only about an inch and a half in length, inflict horrible wounds, on account of the muscular strength of the creature's neck. When a body of them charge against an enemy, fancied or real, they

will never be driven away, but will fight till the last is slain. On this account, no one will willingly oppose them; and, if a herd of peccaries comes in the way, men, horses, and dogs, all fly in haste, as even the horses would be soon brought down, for their legs would be cut to pieces.

Of the two species of this animal, the collared peccary is the smaller. It is from $13\frac{1}{2}$ to $15\frac{1}{2}$ inches at the shoulder and ranges from Arkansas and Texas to Patagonia.



PECCARIES, AND THEIR SAVAGE WAYS.

The white-lipped peccary is the larger species, and is found south of the Rio Negro.

An altogether unique feature in these animals is the presence of a large gland in the middle of the back, from which is secreted in great abundance a most evil-smelling oily substance.

In appearance, peccaries are not unlike small hogs but with very slender limbs; they have no tails, and their snouts are very long and flexible.



STORY OF THE LINSANG.

Next to the ocelot, I think the linsang is the most beautifully marked animal I ever met. The linsang is related to the civet and there are four varieties of it, three Oriental and one African.

It has a long, slender body, short limbs, long head and neck, and a tail longer than the head and body combined. The claws can be completely withdrawn within their sheaths; the soles of the feet are hairy.

It has no scent pouch like the civet.

It is not only in the color of its fur, but the texture also, that the linsang is beautiful. The fur is short and soft and so thick that the skin of the animal looks like a pile of velvet. The ground color is reddish, freely marked with bold black spots, while the long tail is circled by black rings.

This striking combination and arrangement of colors has suggested the name of tiger-civet for this animal, but it is better known by the name of linsang.

They are all flesh-eating animals, but some of them also feed upon insects. The linsangs of Asia have larger spots than the African species.

The earliest known of these animals was the Javan linsang from Java, Borneo, and perhaps Sumatra. It is the smallest of the linsangs.

The Burmese linsang, which is the largest, and handsomest, of the group, appears to be a rare animal, and is at present known only by two specimens, one obtained from near Moulmein, and the other in South Tenasserim. The

tail is slightly shorter than the head and body; the length of the two latter being about nineteen inches, and that of the former (including the hair at the tip) just under seventeen inches. The body has a grayish ground-color, marked with about six very broad and somewhat irregular brownish-black



LINSANGS.

bands extending across the back, and separated by very narrow intervals. On the flanks and neck the markings form broken lines and spots, one very distinct line always extending from behind the ear to the shoulder. The outer surfaces of the fore-limbs and of the thighs are spotted; and the tail has seven complete dark rings, separated by narrower light interspaces.

The spotted linsang, which is found from the Southeastern Himalaya to Yunan, is a somewhat smaller animal; the length of the head and body being only fifteen inches. It is readily distinguished by its coloration; the back being marked with rows of large oblong spots, instead of bands.

A tame specimen of this beautiful animal was once kept by a Mr. Hodgson in Nipal. He describes it as very docile, fond of notice, and never giving vent to any kind of sound. It was free from the strong odor characteristic of the true civets, and was fed upon raw meat. He states that in its wild condition this species is equally at home on trees and on the ground; and that it dwells and breeds in the hollows of decayed trees. It preys chiefly upon small birds, upon which it is wont to pounce from the cover of the grass.

The African linsang, of which some of the distinctive characters have been already mentioned, is found only on the West Coast, in Sierra Leone and Fernando Po, and is, therefore, widely separated from its Oriental relatives. The tail is somewhat longer than the head and body, measuring upwards of forty and one-half inches; whereas the total length of the head and body is but thirty-eight inches. The spots, as already mentioned, are smaller than in the Oriental linsangs, and, with the exception of some stripes on the back of the head, and a line extending from the neighborhood of the ear to the shoulder, do not run together into lines or patches. The tail is peculiar in that the light rings separating the large dark bands are divided in the middle by very narrow dark rings.



STORY OF THE AARD-VARK.

When in South Africa among the Boers, I frequently shot those ugly and ungainly animals the Boers call aard-varks, or, in English, earth-pigs. It is not always easy to get a shot at one, for they are keen of hearing, and rush to their burrows at the slightest unusual sound. When unable to reach their burrows, they dig into the ground where they happen to be, and they are so powerful that they can soon sink their large bodies out of sight even when the ground is hard and sun-baked.

The body of the aard-vark, which is usually almost naked, but sometimes thinly clad with bristly hairs, is heavy and ungainly. The long muzzle of the head is almost a trunk; the ears are of great length, and the tongue can be extended like that of the pangolin, although it is not so worm-like. The skin is of remarkable thickness, its general color being yellowish brown, with a tinge of red on the back and sides, while the head and under-parts are light reddish yellow; and the hind-quarters, the root of the tail, and the limbs brown. A full-grown aard-vark measures a little over six feet in total length.

The teeth of the aard-vark differ from those of any other known animal. The Cape aard-vark inhabits South and South-Eastern Africa; it is replaced in North-Eastern Africa by the Ethiopian aard-vark; the former being distinguished by the thicker coating of hair, more especially on the back and flanks, as well as by the thicker and shorter tail, and the longer head and ears.

The aard-varks feed exclusively on termites and ants. In South Africa their deep burrows are generally constructed in the neighborhood of the tall mounds formed by the termites; and, in the old days, before these animals were hunted for their skins, it used to be said that wherever termite-hills were numerous, there an aard-vark might confidently be expected. Wherever these animals are abundant, a number of half-formed holes are seen in the ground and on the sides of the ant-hills, which have been commenced and abandoned. Aard-varks usually spend the whole of the day asleep in their burrows, but



THE AARD-VARK AND ITS HABITS.

may occasionally be seen abroad in the early morning. In digging, they work with their fore-feet, and throw out huge clods of earth between their hind-legs. But little definitely is known as to their breeding-habits, although it has been ascertained that the Ethiopian species gives birth during May or June to a single offspring. At birth the young is naked and flesh-colored; and is suckled by its parent for a long period.



STORY OF THE GORILLA.

The gorilla, an enormous ape from Western Africa, is the largest member of the monkey family, but others have a much greater resemblance to man and have many human characteristics wanting in the gorilla. Of the man-like apes, the chimpanzee is the largest and most commonly known. Next comes the orang-outan, which frequently attains a height of over five feet. The gibbon is a small, active simian, and has the peculiarity of great cleanliness; the mother washing her offspring's face several times daily in spite of the struggles and screams of the young. Others are the marmoset, lemurs, the spider-monkeys.

A great deal of nonsense has been written about the impossibility of man being descended from the chimpanzee, a gorilla, or an orang. No one, however, who knows what he is talking about, can ever suppose for a single moment that such was the case. What zoologists do contend for is that, supposing some kind of evolution to be true explanation of the origin of animals,—and all the available evidence indicates that it is so,—man is so intimately connected, so far as his bodily structure is concerned, with the higher apes that, in this respect at least, he cannot but be considered to have had a similar origin. And on this view both man and the man-like apes are regarded as diverging branches descended from a common ancestor,—“the

missing link,"—long since extinct, and as much unlike any living ape, as such apes are unlike man himself.

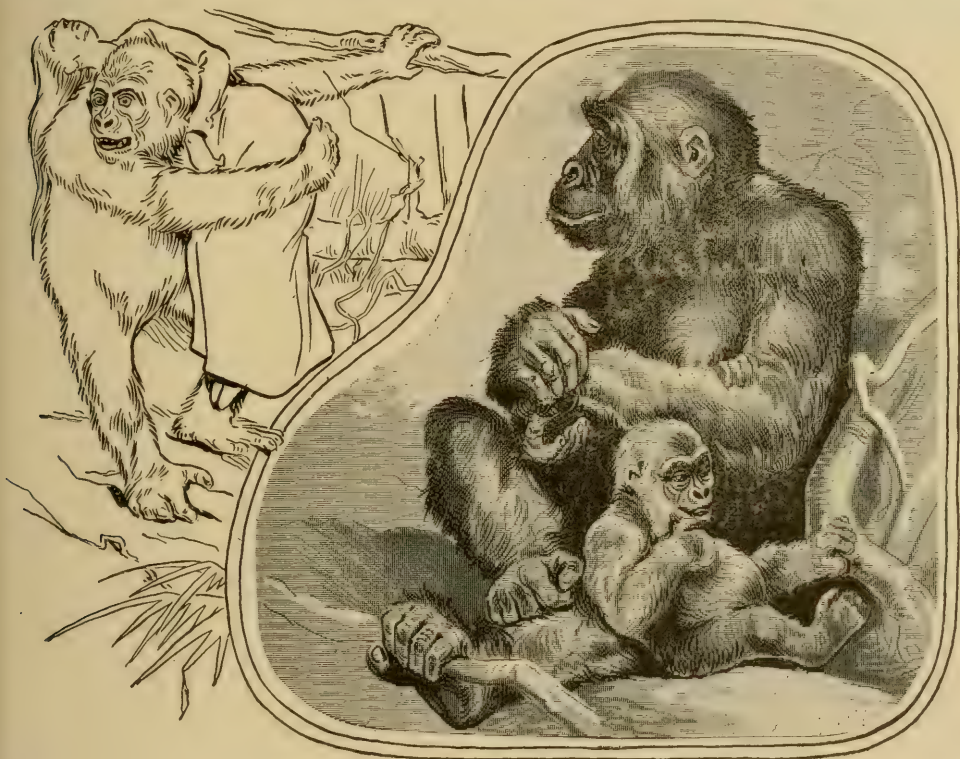
That the higher apes are closely related in their bodily structure to man is obvious to all, and it is a fact that the differences between some of these apes and man are of far less importance than those by which the lower monkeys are separated from the higher apes. It has, indeed, been attempted to show that apes and monkeys are sharply distinguished from man by the circumstance that while man is two-handed, apes and monkeys are four-handed. The difference between the foot of one of the larger apes and that of man is, however, merely one of degree, and is much less than that between the apes and the lowest representatives of the order.

Most of the monkey tribe are inhabitants of forest regions. Aided by their hand-like feet, all of them are expert climbers, and many, like the oriental gibbons and the South American spider-monkeys, but rarely leave the trees, leaping from bough to bough, and thus from tree to tree, far above the heads of the travelers below, to whom their presence is made known only by their continual howling or chattering. The climbing powers of the South American monkeys are largely aided by their prehensile tails, which serve the purpose of a fifth limb. Owing to the warmth of the regions in which most of them dwell, monkeys never hibernate. Contrary, however, to what is often supposed to be the case, several of the smaller species are expert swimmers, and will fearlessly cross comparatively large rivers.

When the human skeleton is contrasted with that of the ape the size of the ape's forearm is the most striking point of difference. Next comes the shape of the skull and the ring of bone surrounding the sockets of the eyes. The number of teeth differs in the various species. In the very young the resemblance to man is much greater than in the adult ape.

Dr. Robert Hartmann, of Berlin, who has devoted much attention to the man-like apes, observes that "in the gorilla, the chimpanzee, and the orang-outan, the outer form is subject to modifications, according to the age and sex. The difference between the sexes is most strongly marked in the gorilla, and these differences are least apparent in the gibbons. When a young male gorilla is compared with an aged animal of the same species we are almost tempted to believe that we have to do with two entirely different creatures. While the young male still shows a resemblance to the human structure, and develops in its bodily habits the same qualities which generally characterize the short-tailed apes of the Old World, with the exception of the baboon, the aged male is otherwise formed. In the latter case the

points of resemblance to the human type are far fewer; the aged animal has become a gigantic ape, retaining indeed, in the structure of his hands and feet, the characteristics of his kind, while the protruding head is something between the muzzle of the baboon, the bear, and the boar. Simultaneously with these remarkable alterations of the outer structure there occurs a change of the skeleton. The skull of an aged male gorilla becomes more projecting at the muzzle, and the dog teeth have almost attained the length



GORILLA AND YOUNG.

of those of lions and tigers. On the upper part of the skull, which is rounded in youth, great bony crests are developed on the crown of the head and on the forehead. The arches above the eye-sockets are covered with wrinkled skin, and the already savage and indeed revolting appearance of the gorilla is thereby increased."

Natural history is indebted to Paul Du Chaillu, the African traveler and explorer, for its first definite knowledge of the gorilla.

A full-grown male, if standing in a perfectly upright position, will generally measure rather more than six feet in height; and since his body is much more bulky, and his limbs are longer than those of a man, he is considerably the largest representative of his kind. As in the chimpanzee, there are distinct eyebrows on the forehead and lashes to the lids of the eyes. The nose has a relatively long bridge, and its extremity is high, conical, and widely expanded. The upper lip is remarkable for its shortness; and the whole of the dark skin in the region of the nose, cheeks, and mouth is marked by a number of wrinkled folds. The massive jaws are extremely projecting, and with their huge tusks, or dog teeth, complete the repulsive aspect imparted to the expression by the overhanging eyebrows. The ears are comparatively small and appear to be fastened above and behind to the sides of the face. The head is joined to the trunk by a very short and thick neck, which gives the appearance of its being set into the shoulders; and the term "bull-necked" is therefore strictly applicable to the creature. This great thickness and power of the neck is largely due to the backward projection of the skull, and the tall spines surmounting the vertebra of the neck. The muscles of the shoulders and chest are equally powerful, as is essential for the movements of the mighty arms.

Although when driven to close quarters the gorilla is doubtless one of the most terrible of foes, yet it appears certain that very exaggerated accounts have been given of the natural ferocity. Herr von Koppenfels informs us that so "long as the gorilla is unmolested he does not attack men; and, indeed, rather avoids the encounter." And when these creatures catch sight of men, they generally rush off precipitately in the opposite direction through the underwood, giving vent at the same time to peculiar guttural cries. It appears that many gorillas are killed by the natives with the aid of a weighted spear suspended by a cunningly devised system of cords in the creature's path. Others are, however, undoubtedly shot by the negroes, although it would seem that, at least in many instances, such animals have been accidentally met by the hunters as they travelled through the forest rather than deliberately sought out and tracked.



THE STORY OF THE WEASEL.

No one would think, on seeing a weasel for the first time, that the graceful, slender little animal, with its brown back, pretty, white throat, funny face, and sparkling eyes, was such a fierce, bloodthirsty creature. But that little head is full of murderous designs, and has the courage of a giant. Rats and mice are everywhere hunted out and destroyed by the weasel. It inflicts a bite on the head which pierces the brain, and seldom fails to lay the victim dead at its feet by one stroke.

The weasel is also a destroyer of newly-hatched chickens and young ducks, as well as of the smaller feathered tribe; and although it does good service in keeping down the mice, it is a bad neighbor to the hare and rabbit-warren. It is a most active and persevering hunter; few trees will stop it when in search of birds' nests, which it robs, not only by sucking the eggs, but by carrying off the young.

The weasel is excessively useful to farmers on account of its unrelenting war on rats and mice, and in an incredibly short space of time it extirpates them from a barn or stack. It hunts by scent like dogs, and tracks the unfortunate rat with the most deadly certainty. It is so courageous that it will even attack men, and is by no means a despicable antagonist, as its instinct invariably leads it to dash at the throat, where a bite from its long sharp teeth is always dangerous.

The weasel's nest is composed of dry leaves and herbage, and is made in a hollow tree, dry ditch or hole in the side of a bank. If any one approaches the nest while the young are helpless, the mother and often the male will attack the intruder with great fury, showing courage to a remarkable degree.

The pretty little South African weasel is worthy of mention, not only on account of its remarkable coloration, but also as being the sole representative of the weasels in Africa south of the Sahara. This species is distinguished from all the other weasels by having the ground-color of the fur black, with the upper part of the head and neck white, and four pale brownish white stripes running along the back; the tapering tail being white.

I have on several occasions witnessed this animal tantalize the lion and other large animals of South Africa. It has a shrill cry, and, secure in its nest among the rocks, it comes to the entrance and sets up a peculiar moan. Should a lion be within hearing he proceeds to investigate, and the moan is lessened until the lion believes himself about to find a victim. When he approaches quite near, the little creature retreats to a secure place but continues its cry. The lion after a vain search gives up the attempt.

The weasel is very often called "wormlike," and a better name could scarcely be applied to it, for anything more wormlike could hardly be imagined in a hairy quadruped or four-footed animal. The legs are extremely short in relation to the body, which is slender in the highest degree, and almost regularly cylindrical from one end to the other. Then the neck is of most disproportionate length, and carries the head out so far, that the forelegs appear as if placed quite at the hinder end of the chest, instead of in the front of it. The head passes gradually into the neck, and the neck into the body. The head is flattened, and bears little, glittering savage-looking eyes, and small rounded ears. The length from snout to root of tail does not exceed eight inches. The tail is about two inches long. The fur is light reddish-brown above, and white below; in northern latitudes the brown parts assume a much lighter color in winter, so that the weasel undergoes a change of coat similar to, but less extensive than that undergone by the ermine.

The weasel is a good climber, and makes use of his skill in this accomplishment to prey upon birds, their eggs, and young. It will pursue its prey over fields, in trees, in subterranean burrows, or across water. Like many of the wild cats, it kills far more than is necessary for its support, and in pursuance of its favorite occupation of slaughter shows an unequalled courage and pertinacity. Its power of keeping its presence of mind under very

trying circumstances is well shown in the following anecdote: While riding through a field one day I saw at a short distance a kite pounce on some object on the ground, and rise with it in his talons. In a few moments, however, the kite began to show signs of great uneasiness, rising rapidly in the air, or as quickly falling, and wheeling irregularly round, whilst it was evidently endeavoring to force some obnoxious thing from it with its feet.



THE WEASEL AND ITS PREY.

After a sharp but short contest, the kite fell suddenly to the earth, not far from where I was intently watching the manœuvre. I instantly rode up to the spot, when a weasel ran away from the kite, apparently unhurt, leaving the bird dead, with a hole eaten through the skin under the wing, and the large blood-vessels of the part cut through.



THE STORY OF THE FERRET.

The ferret is one of the many animals that have given a word to the English language. The instinctive desire to follow burrowing animals is the most striking peculiarity of the ferret, and his ability as a rat-catcher and rabbit-hunter is well known. It is this trait which has resulted in the verb "ferret," meaning to investigate. Detectives ferret out crimes and build up the clues which result in the arrest of the criminal.

So wonderfully are these little creatures suited for the purpose of tracking the various burrowing animals, that man has taken one of them into use as his assistant, training it to follow rabbits and rats into their holes, and to drive them out, in order that he may kill them. Its long and slender body enables it to wind its way through the narrow passages which those animals dig in the ground, and so to force them from a position in which they would otherwise be quite secure.

In rabbit-catching the ferret is usually sent into the hole either muzzled or attached to a coil of string, by which it can be withdrawn. If allowed to enter a rabbit-hole unmuzzled, or without a string, ferrets are very likely to remain in such good quarters, and to slaughter the occupants one after another. The usual plan is to stop all the entrances to the burrows by means of small bag-like nets, in which the rabbits are caught when they bolt; but sometimes they are allowed to bolt freely, and are either shot or coursed with dogs. In ferreting it is essential that those who are present should be perfectly silent, as otherwise the rabbits will prefer to be eaten alive by the ferret in their holes

rather than attempt to escape. It is also important that no one should stand immediately in front of the entrance to the hole. When a ferret enters a burrow in which there are several rabbits, a prodigious scuffling and scurrying immediately takes place in the interior; and after a few minutes, if not frightened by sounds above, the occupants soon begin to bolt in rapid succession at the various exits. Like the other members of its tribe, a ferret almost invariably seizes a rabbit immediately behind the ear.

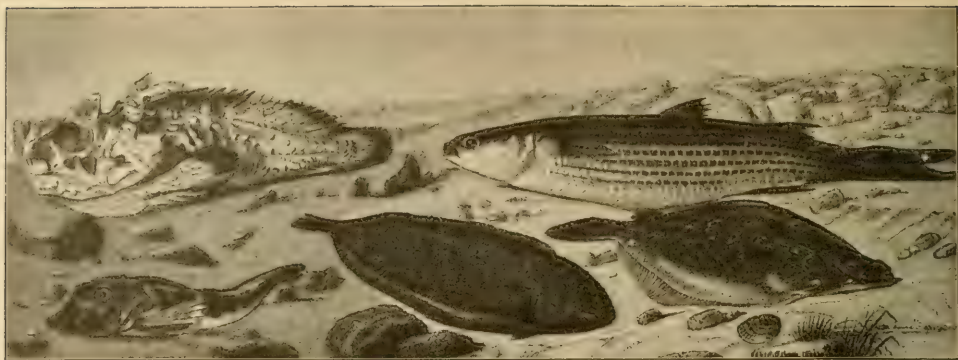


THE FERRET AND ITS PREY.

Ferrets are bred chiefly for rabbit and rat-hunting, both in Europe and the United States. Although they learn to know their masters to a certain extent, they are untrustworthy animals, and should be handled with caution. The ferret has no strong local attachments, and, therefore, requires to be strictly secured. It is also very susceptible to cold.

The ferret is of a light yellowish color, changing almost to white in winter. It is about fourteen inches long, with a tail of six inches. The eyes are pink.

The American species is known as the black-footed ferret and is found in the Rocky Mountain region.



STORY OF THE CHIPMUNK.

Among the prettiest of the wild animals of the United States is the chipmunk, or ground squirrel.

Who could desire a prettier coat than the chipmunk wears? The ground color of the fur is the same as that of the squirrel, with a simple black stripe running down the middle of the back, with a white stripe bordered with black on either side of it. There are also two white stripes separated by a black one above and below the eyes.

The Siberian chipmunk differs from the American variety, by having four light-colored and fine black stripes on the body.

The chipmunk does not live entirely upon nuts, as many suppose, although they are its favorite food. It is also fond of beech-mast, various kinds of corn and roots and the larvæ of some insects.

Chipmunks are most numerous where food is most abundant. When they find a place where food is plentiful, they at once establish themselves for the winter, and begin to hoard up large stores.

Chipmunks collect an astonishing quantity of food for the winter, which is carried to its place of deposit in their large cheek-pouches. In addition to regular storehouses, these animals lay up a portion of their winter supply here and there beneath the leaves of the forest. In a hole tenanted by four chipmunks, Audubon relates that in the nest itself he found about a gill of corn, and in the communicating galleries upwards of about a quart of nuts, a peck

of acorns, about two quarts of buckwheat, and a small quantity of Indian corn and grass seeds.

Generally the chipmunk keeps to the ground, although it will often run some few feet up the trunk of a tree, and when pursued, if its hole be not accessible, will take refuge among the branches. Instances are, however, on record where these animals have been observed regularly ascending tall trees in search of food; and they seemed perfectly at home among the boughs, although they never leaped from branch to branch after the manner of the squirrels.

In regard to its general mode of life, the chipmunk establishes its head-

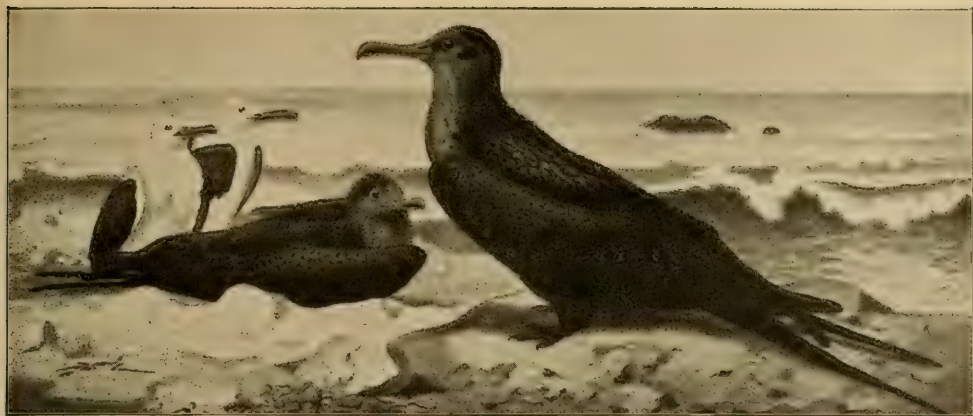


THE CHIPMUNK AND ITS HABITS.

quarters in some log or stump, or in a hole excavated by itself in the earth, generally among the roots of a tree. It is partial to brush-heaps, wood piles, stone walls, rail fences, accumulations of old rubbish and other places that afford a pretty certain escape, and at the same time enable it to see what is taking place outside. For, though by no means wary, it delights in these loosely sheltered hiding-places, where it can whisk in and out at will, peep unobserved at passers-by, and dart back when prudence demands. If suddenly surprised, it utters a short *chip-per, r, r, r*, and makes a sudden quick dash for its retreat, which is no sooner reached than, simultaneously with the dis-

appearance of its tail, out pops its head, the keen dark eyes gazing intently at the source of alarm. If not pursued further, it is very apt to advance towards the supposed enemy, betraying excitement by a series of nervous starts and precipitous retreats, till finally, making a bold rush, it dashes by the object of dread, and in another instant is peering out from a hole beneath the roots of a neighboring tree. The chipmunk does not make an agreeable pet, and it is apt to be sulky and morose, and disposed to bite the fingers of any one who offers it food.

The ground-squirrel of Siberia, portions of Eastern Europe, and North America, together with several other closely-allied North American species commonly known as chipmunks, constitute a group serving to connect the squirrel family with the susliks. The chipmunks are indeed so closely allied to the true squirrels that Dr. Forsyth-Major proposes to include them in the same family. They differ, however, from both the spiny-squirrels and the true squirrels in the possession of pouches inside the cheeks; on which account they may, for the present at least, be allowed to stand under the title by which they are commonly known. They are further characterized by the sides, or the back and sides together, being marked by white or grayish-white stripes bordered by black bands. The ears are of medium size or small, and are never tufted with long hair.



THE STORY OF THE CAVY.

The species of cavy with which American children are most familiar is known as the guinea pig.

One of the best known of the many species is the restless cavy of Uruguay and Brazil, which measures rather more than ten inches in length, and weighs about a pound. The color of the long and coarse fur is grayish-brown; and the teeth are white. This species is common in certain districts in the neighborhood of the Rio de la Plata, where it is known by the name of *aperea*. According to Darwin, it is occasionally found on the sandhills or the hedges of aloes and cactuses; but its more usual and favorite haunts are marshy spots covered with water plants. In the latter places it lives among the shelter of the vegetation, but in sandy districts it excavates burrows. It usually comes forth to feed in the evenings and mornings; but in cloudy weather may sometimes be seen abroad at all hours. In Paraguay, it is invariably found in moist places on the borders of the forest, where it lives in colonies of from six to fifteen, among the dense masses of bromelia. Here it makes regular beaten paths, and never wanders far afield. It breeds but once a year, producing only one or two young. Cutler's cavy, from Peru, is a rather smaller species, distinguished by the general black hue of the fur, although the flanks and more especially the under-parts tend to brown.

Much discussion has arisen as to the origin of the domestic guinea-pig. It was long considered to have been derived from the restless cavy; although several writers pointed out that from its aversion to wet and cold such an origin was improbable. It appears, however, that the real ancestor of the domestic breed is the above-mentioned Cutler's cavy. It has been ascertained that the latter species was domesticated by the Incas of Peru, from whence it was carried to Colombia and Ecuador; while, on the other hand, no cavy was ever domesticated in Brazil.

The domesticated cavies of the Incas were either uniformly white or reddish



GUINEA PIGS.

brown, or a mixture of those two colors. Guinea-pigs are generally either white or white marked with yellow and black. Occasionally, however, they may be white marked with pale yellow, and in such cases they always have pink eyes. Sometimes, again, they may be marked with brownish black, mouse-color, or yellowish gray; while in certain cases the black may be replaced by ashy gray, when the eyes are pink. Of late years a breed has been formed with exceedingly long coarse hair, and of larger size than ordinary.

Guinea-pigs were introduced into Europe by the Dutch during the sixteenth century, shortly after the discovery of America; the name being probably

a corruption of Guiana-pig. From their pretty appearance and ways, as well as the ease with which they are kept and the rapidity with which they multiply, guinea-pigs have always been favorite pets with children; although it must be confessed that from their stupidity and want of affection they cannot be regarded as very interesting creatures. When, however, a number of them are kept together, they certainly form a pretty sight; and the manner in which they follow one another round and round their place of confinement in unbroken order is very remarkable. In some respects they resemble rabbits in



PATAGONIAN CAVIES.

their habits, while in other they are more like mice. Their pace is by no means swift and consists partly of a series of short springs; while the peculiar manner in which the body is elongated when creeping is familiar to all. Their food consists of roots, corn and various vegetables; and it is essential to the well-being of these animals that the place where they are kept should be dry and warm. If supplied with abundance of fresh vegetables, guinea-pigs do not require water; and when they do drink they take but little, and this with a lapping action. When pleased, guinea-pigs utter a soft murmuring cry; when

alarmed, this changes to a squeak; while a series of short grunts (from which they probably derive their name) appear to be their mode of expressing their wants and desires.

A few hours after they are born, young guinea-pigs are able to run by the side of their mother, and on the second day they are able to nibble not only soft plants, but even corn.

Although guinea-pigs lack the courage to defend themselves even from a mouse they fight fiercely among themselves, usually to see which shall have the warmest corner or the best chance at the food. Their mode of fighting is peculiar. One of them seizes the neck of its antagonist with its teeth and attempts to tear off the hair. The one attacked will turn and kick up behind like a horse, scratching the other's flanks, and sometimes drawing blood.

The Bolivian cavy is smaller than the restless cavy and makes his home in the Andes mountains, twelve thousand feet above the level of the sea.

The Patagonian cavy greatly resembles a hare, and lives in a burrow. Although its limbs are long it is not a fast runner like the animal it resembles. Its flesh is white, when cooked, but rather dry and tasteless.



THE STORY OF THE MARTEN.

My experience with martens has shown me that they are among the most bloodthirsty of the small animals. They are closely related to the smaller polecats, stoats and weasels. The well-known European pine-marten, or yellow-breasted marten, is the typical representative of the family. They are of comparatively large size, and may be compared in this respect to the domestic cat. In all of them the body is much lengthened, although to a less degree than is the case with the polecats and weasels. The martens are found only in the Northern Hemisphere, and range far to the northwards; one species, however, occurring as far south as India and the Malayan region.

The pine-marten has a total length of from 25 to 30 inches, of which from 16 to 18 inches are occupied by the head and body, and from 9 to 12 inches by the tail, inclusive of the hair at its extremity. As in the other members of this group, the muzzle is sharply pointed, with the nose extending a little beyond the lips; and the ears are thickly covered with hair on both sides. Beneath the glossy outer fur there is a thick coat of under-fur; and the soles of the feet have a thick coat of fur between the bare pads.

The pine-marten is characterised by the rich brown color of the fur, and the reddish gray tint and yellow tips of the under-fur; the light-colored fur on the throat and chest varying in tint from yellowish white to a bright orange. The range of this species includes a large portion of Northern

Europe and Asia; and in former years the animal was common in the British Isles, where it is now restricted to the wilder districts. From the specific designation of this marten, it would naturally be supposed that it exhibits an especial predilection for pine-forests. This, however, does not appear to be the case, and it would seem that the name was given merely from the circumstances that pine forests are abundant in many of the districts which it inhabits.

Like the other members of the group, it is chiefly tree-frequenting in its habits, and thereby differs markedly from the weasels, which are more fond of the ground. Creeping from branch to branch in silent and stealthy pursuit of birds, squirrels, and other small animals, their sharp and long claws afford them a firm and secure hold of the bark, whilst the long and somewhat bushy tail aids them in maintaining their balance on the boughs; the ears, too, are large and open, a circumstance which is of great advantage to them in discovering and pursuing their prey, amidst the dense foliage in which they love to conceal themselves. Martens will, however, frequently descend to the ground, when they will destroy mice, rats, and moles, as well as rabbits and hares, and, it is said, even lambs. They are also deadly enemies to domestic poultry of all kinds; while in the neighborhood of the sea-coast they are also reported to feed on mussels. When domesticated, it is said on good authority that they will eat fruit.

Although it was long considered that the beech-marten was also found in the British Islands, it is now ascertained that the present species is the only member of the group that has ever occurred there. In the wilder districts of Scotland, as well as in the north of England, Wales, and Ireland, the marten still holds its own; while specimens are occasionally captured in districts where it is now practically extinct.

The beech or white-breasted marten, formerly supposed to be an inhabitant of the British Islands, is generally of a greyish brown color, although the tint may vary from a whitish brown to deep blackish brown, with the tail and limbs generally darker than the body. The light area on the throat and chest, which may vary considerably in extent in different individuals, is invariably white; while the color of the under-fur varies from ashy to pure white. The length of the head and body is about 18 inches, and that of the tail, with the hair at the end, 13 inches.

This species is a more southern form than the last, being widely distributed in Europe, but not reaching either the British Islands or Scandinavia; while to the eastward it extends into Asia as far as Turkestan and

the Eastern Himalaya. In the latter districts examples have been procured from Afghanistan in the west to Sikhim in the east, and also from Kumaun and Ladak; further eastwards it appears to be unknown. Throughout the Himalaya it is generally found at considerable elevations, although descending as low as five thousand feet in the Gilgit district. It inhabits the whole of Central Europe and Italy, the warmer parts of European Russia as far as the Urals, as well as the Crimea; the western and northern slopes of the Caucasus, Palestine, Syria, and Asia Minor. It appears, however, to be unknown in Persia.



THE PINE MARTEN.

Over the greater part of Europe this marten is a commoner animal than the pine-marten, which it also exceeds in the greater boldness of its disposition. Although it is a frequenter of woods and trees, it is also found not uncommonly among rocks and stones, and hence receives its German name of *steinmarder*. In barren districts like Ladak this marten must, of course, nearly always dwell among rocks. From its bold disposition it is frequently found in the neighborhood of human habitations, where it inflicts much damage on poultry.

In its general mode of life the species closely resembles the pine-marten. The nest is carefully formed of hay and straw, and situated in a hole in a tree, in the crannies between rocks, or in an old barn or granary. The young,

generally from four to five in number, are born about the month of April, and are blind for the first fortnight of their existence.

Its wanderings at night during the summer are extensive; and no dove-cot—however lofty it may be—is safe when there is a marten anywhere in the neighborhood. The food of this species is much the same as that of the last, although in inhabited districts including more domesticated animals it feeds on mice, rats, rabbits, and all kinds of birds; and, when dwelling in woods, hunts and kills squirrels, lizards, and frogs. It likewise eats fruits of various kinds, such as cherries and plums; and in some parts of the Continent is considered to do so much harm to orchards that the stems of the trees are washed with tobacco-juice or petroleum in order to prevent the marten from ascending them. Like all its kindred, the beech-marten is, for its size, an exceedingly bloodthirsty creature, and will often kill more than it can devour.

These animals utter a kind of mewing sound not unlike that of a cat; and a pair of them in a tree may be heard for a considerable distance.

In general the fur of this species is less valued than that of the pine-marten; but some skins from Afghanistan and Turkestan have beautiful fur, with long, glossy, nearly black piles, and very soft white or pale ashy under-fur. These Turkestan martens were at one time regarded as belonging to a distinct species.

The inferiority of the fur of the ordinary beech-marten, as compared with that of the sable, is due not only to its color and actual length, but likewise to the relative length of the long piles as compared with that of the under-fur, which is scarcely concealed by them. The more northern skins are always superior to those from Southern Europe; and a large number are imported into this country and sold as an inferior kind of sable.

The sable is so nearly related to the pine-marten that some writers have considered that it should be regarded merely as a variety distinguished by the greater length and fineness of the fur. In the most highly-esteemed specimens the fur should be thick, soft, and nearly uniformly colored. Such skins are blackish above, having a mixture of black and gray on the snout, gray on the cheeks, chestnut-brown on the neck and flanks, and orange-yellow, or sometimes reddish orange, on the throat. The margins of the ears are either greyish white or light brown in color. In a number of cases there is a larger or smaller admixture of white hairs among the dark fur of the back, while the muzzle, cheeks, breast, and under-parts are white. In other specimens the fur on the back is yellowish brown, while that of the

under-parts is nearly white, and only the legs black. Good skins should exhibit a kind of "watering," owing to the reddish tint of the woolly under-fur showing through the long outer hairs. An average sable will measure about 20 inches from the snout to the root of the tail; the length of the tail being 7 inches. The skins are valued only when they have their winter fur, the summer coat being much shorter. In spring, although the winter fur may still be retained, the skins are quite useless, as the hair will drop off even after the skins have been dressed.

The range of the sable originally extended from the Ural Mountains to Behring Sea, and from the mountains on the southern borders of Siberia to the 68th parallel of north latitude. It is, however, now much curtailed, owing to the incessant persecution to which the animal has been so long subject; and the chief haunts are now the mountain forests of North Asia, more especially Eastern Siberia and Kamschatka.

Sables are for the most part of nocturnal habits, and, though they occasionally feed by day, generally spend that period of the twenty-four hours in holes at the roots or in the trunks of trees. They dislike the presence of man, and are rarely to be found in the neighborhood of the villages; their favorite resort being the depths of the forest least frequented by the natives. It is considered that the most inaccessible and least known parts of the country are the best hunting grounds. They live on hares, birds of all kinds, and, in short, almost every living thing they can kill, but they are also said to eat berries, and even fish. There are, indeed, but few animals, apparently, which do not live on fish in Kamschatka. They have only one litter during the year, generally in the month of April, and bring forth four or five young at a birth in a nest in the holes of trees. Formerly a large number of sables were caught in traps in Kamschatka, but they are now more generally hunted there with dogs; these dogs being specially trained for the purpose, and either running down their quarry on the deep snow, driving them into trees, or smelling them out when lying asleep in holes. The great object in such hunts is to "tree" the sable, when the tree is surrounded with nets, and the animal either shaken from the boughs or knocked off them by means of poles. If the sable does not fall into the nets, it is again pursued by the expectant dogs, by whom it is either run down, or once more "treed." When the tree is too high to allow of the sable being dislodged by the usual methods, it is either felled, or the animal is shot; but recourse to guns is if possible avoided, as the shot does damage to the skins. If the distance they have to travel be a long one, the Kamschatkan

hunters start on their winter expeditions after the sable towards the end of September; but, if the district is nearer, they wait until the first fall of snow or about six weeks afterwards. If a single hunter takes twenty sable skins in a season, he considers himself fortunate. The total number annually taken in Kamschatka must be very large. The price of a single sable skin in St. Petersburg ranges from \$10 to \$125, according to its quality and condition.

The American marten is so nearly related to the pine-marten and the sable that there may be a question whether it should be regarded as anything more than a variety. The long hair is very like that of the pine-marten, to which it is most nearly allied; its general color being more or less uniformly brown, the breast-spot yellow, and the head and ears grey or whitish.

It is found in the Hudson's Bay district, Labrador, Alaska, and other parts of North America, descending on the eastern side as far south as the Adirondack Mountains, near New York.

In habits it appears to be similar to the pine-marten. In the Adirondacks it inhabits the evergreen forests, and is chiefly, although not exclusively, nocturnal. Its food consists of partridges, rabbits, and other smaller rodents, birds' eggs, young birds, frogs and toads, and large insects. It is said to display a distinct preference for forests of conifers, and is thoroughly arboreal, never venturing into the neighborhood of human dwellings. Although generally gentle-looking in appearance it is related that when attacking animals larger than itself, such as hares, it becomes as fierce in demeanor, in proportion to its size, as a tiger. When one is seen among the tree-tops, the hunter has but to whistle and thus attract its attention, when it will afford a ready shot.

The fur is of great commercial value; the best skins selling at about \$15. Curiously enough, at certain periods this species becomes exceedingly scarce; the periods of scarcity recurring with great regularity at intervals of about ten years. How the animals disappear is, however, unknown, since there is no region into which they can migrate without the knowledge of the hunter, and none are found dead. The best season for obtaining the skins is in November; the animals being generally caught in wooden traps, which are set in lines for miles across the country. In spite of the incessant persecution to which it is subject, it does not appear that this species has appreciably diminished in number in the wilder regions of its habitat.

The largest of all the martens is the so-called fisher marten, an animal rejoicing in a number of names—both popular and scientific—being variously designated as the “pekan,” “Pennant’s marten,” “black fox,” and “black cat.” The two latter titles are due to the large size, stout build, and dark color of the animal, which in point of form may be more aptly compared to a fox than to a weasel. It measures from 24 to 30 inches from the tip of the snout to the root of the tail. Its general color is blackish brown, becoming grey on the head and neck; while the throat is distinguished by the absence of the light-colored patch distinctive of all the other species. It ranges over the greater part of North America, as far northwards as Alaska and the Great Slave Lake, while to the southwards it is found in the upper part of Texas and about latitude 35 degrees. Continual hunting has, however, exterminated the animal from the more settled districts of the United States east of the Mississippi.

The name of fisher is somewhat of a misnomer, for these animals commonly frequent deep swamps and wooded mountain sides, away from the immediate vicinage of water, and are not known to catch fish for themselves as do the mink and otter. However, they are fond of fish, and never neglect to devour those that chance to fall in their way. They prey chiefly upon hares, squirrels, mice, grouse, small birds, and frogs, and are said to eat snakes. They also catch and feed upon their own congener, the marten, and make a practice of devouring all that they discover in dead-falls and steel-traps. It also appears that porcupines compose a considerable proportion of their food in some districts; specimens being sometimes killed with numbers of porcupine-quills in their skin and flesh. Curiously enough, these needle-like quills which often exceed $2\frac{1}{2}$ inches in length, seem to cause it but little or no inconvenience. Instances are recorded where the fisher marten has attacked and routed such a comparatively large animal as the raccoon.

In its chiefly nocturnal and largely arboreal habits the fisher marten resembles most of the other members of the group; its agility in the forests is, however, very remarkable, and when much frightened, or in pursuit of prey, it has been known to leap from tree to tree. The nest is usually built in the hole of a tree at a great height above the ground; the young being generally from two to four in number and produced at the end of April or beginning of May.

The fisher marten is trapped for its skins in the northern parts of America from October till May, those captured in the early part of the season being

in the best condition. The fur is not nearly so valuable as that of the American marten; the usual price being about a dollar and a half per skin. In the European markets the fur is generally known as Virginian polecat.

Readily distinguished from all the other species by its more brilliant color and the greater relative length of the tail, which is fully equal to two-thirds that of the head and body, the Indian marten is the handsomest member of the group. The soles of the feet are partially naked, although this character is less marked in Himalayan specimens than in those from more easterly regions.

The fur is generally short, although longer in the Himalayan than in other examples, and has a thick, woolly under-fur during the winter. There are two varieties of this animal, one of which is more brightly colored than the other. In the former, or common Indian type, the upper part of the head and neck, the rump, the tail, and the limbs, are either glossy blackish brown or black; while the middle of the back is of a paler brown, sometimes with a whitish tinge. The chin and upper part of the throat are white, while the lower throat and chest are either of a brilliant orange, brownish yellow, or pure yellow tint. In the second variety, with the exception of the white chin and throat and the pale yellow chest, the whole of the fur is dark brown. The length of the head and body varies from 20 to 22 inches, and that of the tail, inclusive of the hair at the tip, from 17 to 20 inches. The Indian marten is found throughout the Himalaya, from the regions to the westward of Kashmir to Eastern Assam, and thence through the hilly districts of Burma to the Malay Peninsula and Sumatra. In Peninsular India it occurs on the Nilgiri and Travancore Hills; whilst to the eastward its range extends as far as South China and Amurland.

This marten is only found where the hills are thickly clothed with forest, and is by no means exclusively nocturnal. Although apparently far from uncommon in the Himalaya, it is, according to the writer's personal experience, but seldom seen. He had, however, once the good fortune to see a pair of these handsome animals descend from the trees, and gambol in a forest-glade at a short distance from his position. It may sometimes be seen in parties of five or six, hunting for prey either among brushwood or on the branches of trees. When on the move, it is continually uttering a kind of low chuckle, prolonged into a harsh cry when it becomes excited. Its food, which includes large insects, appears to be very similar to that of the other martens, but it is reported to kill young deer.



THE STORY OF THE LEMUR.

So many people mistake lemurs for monkeys, that I have decided to speak at some length of the former animals. The resemblance between lemurs and monkeys is so strong that it is difficult to explain in a popular work the exact difference without treating of the anatomy, the physical construction of both. This I do not propose to do, but will try to make it clear in other ways.

The first point of difference is to be noticed in the foxy, but expressionless faces of the lemurs, indicating that they are of a much lower order of intelligence than apes and monkeys.

Many lemurs are purely night animals, and it was probably from this circumstance, coupled with their silent habits and stealthy movements, that Linnæus was induced to give them the name which they are now universally known. The name lemur is taken from the Latin term *lemures*, which, together with that of *larvæ*, was applied by the ancient Romans to such spirits of the dead as were supposed to be of malignant natures.

Altogether, there are about fifty species of lemur-like animals. They are all restricted not only to the Old World, but also to the southern regions of the great land masses of that hemisphere, none of them being

found to the northward of the tropic of Cancer, while the tropic of Capricorn very nearly limits their southward range. Within this area a few species are found respectively throughout the warmer regions of Africa, and in Southern India and Ceylon, while their eastern limits are marked by the island of Celebes and the Philippines. In all these regions the number of species is comparatively few, and they form but an unimportant element in the general animal family of the country. The case is, however, very different in the great island of Madagascar, which is the headquarters of the whole group. Here we find them constituting no less than one-half the animals of the island, most of the others being small forms, unknown either on the continent of Africa or in Asia. The true lemurs occur only in Madagascar, and it is very remarkable that all the species of the group found in that island scarcely show any closer relationship to those of the African mainland than they exhibit to those of Asia. So abundant, indeed, are lemurs in Madagascar that at least one individual is almost sure to be found in every little copse throughout the island.

It will be evident that such a numerous population of helpless animals like lemurs could not exist in a land overrun with large flesh-eating animals; and in the whole of Madagascar we find only a few civets and an allied creature known as the fossa. Now to account for these peculiar features—the absence of all large flesh-eaters, except civets, and the abundance of lemurs—we have to call in the aid of the geologist. He will tell us that lemur-like animals, accompanied by civet-like animals, existed in England, France, and other parts of Europe during the early part of the Tertiary period. And we are accordingly led to conclude that the lemurs and civets of Madagascar obtained an entrance into that island, doubtless by way of Africa, at a time when that continent was still free from the presence of the large flesh-eating animals and the host of hoofed creatures, which now form such a dominant feature in its animal population. After the lemurs and civets had obtained an entrance into Madagascar that country became separated from the adjacent mainland, and it has remained as an island ever since. There, secure from molestation, the lemurs have attained a development unequalled at any time in any part of the globe, and afford us an admirable instance of the importance a group of animals may attain when living under favorable conditions.

We have already said that many lemurs are essentially nocturnal creatures. To this we may add that they are all of essentially tree frequenting in their habits. Indeed, except when compelled to descend to the ground to

obtain water, or for the purpose of crossing from one plantation or coppice to another, they but rarely leave the trees. Their diet is extremely mixed, scarcely anything coming amiss to them, as will be inferred when we mention that leaves, fruits, insects, reptiles, birds' eggs, and birds themselves are eagerly consumed by most of these animals.

By the natives of Madagascar the lemurs are looked upon with suspicious awe, and are consequently but seldom molested. This is doubtless due to



THE RUFFED LEMUR.

their nocturnal habits and ghost-like movements; while the large eyes essential to these and all other nocturnal creatures have perhaps contributed to this feeling. In Ceylon and India the large glaring eyes of one of the prettiest of the lemurs used to lead to the unfortunate creatures being put to a cruel death. None of the lemurs attain any very large size, and all of them, when unmolested, are perfectly harmless and inoffensive animals, except to the birds, reptiles, and insects upon which they prey.

The largest of the true lemurs is known as the ruffed lemur. It inhabits the Northeast Coast of Madagascar, and as its name indicates, is remarkable for the variety of color of its fur. Frequently this is a mixture of black and white, disposed in patches on different parts of the body, but occasionally white individuals are met with; others are a reddish brown.

The red-fronted lemur is met with in all parts of the island; the white-fronted is found on the Northeast Coast and the black-fronted on the Northwest Coast. Besides these there are the Mongoose lemur of the Western Coast, the black lemur of the Northwest Coast, the gentle lemur of the jungles, the weasel lemur of Northwest Madagascar and the mouse lemur of which there are many varieties.

One of the most interesting of all is the little creature known as the dwarf mouse lemur, but often referred to as the Madagascar rat. The head and body of this diminutive creature do not exceed 4 inches in length, while the tail measures 6 inches. The prevailing color is a pale grey; the chin and under-parts being pale yellow, and the outer surface of the ears light brown, while a white streak runs up the nose and between the eyes. The eyes themselves are surrounded by black rims, giving to the face the appearance of wearing a pair of spectacles.

The dwarf mouse lemur builds beautifully constructed nests of twigs, lined with hair, in the tops of the lofty trees where it delights to dwell. These nests somewhat resemble those of a rook both in form and size, and are used not only as daily resting-places but as cradles for the young. The species is remarkable for the extreme beauty of its brilliant eyes.

The dwarf lemurs inhabit a belt of forest-land stretching from the eastern forest into the heart of Betsileo, a few miles north of Fianarantsoa, where they are tolerably abundant. They live on the tops of the highest trees, choosing invariably the smallest branches, where they collect a quantity of dried leaves, and make what looks from below like a bird's nest. So close is the resemblance, that it requires good eyes to distinguish the one from the other. Their food consists of fruit and insects, and most probably honey. I have frequently seen them catching the flies that have entered their cage for the honey; and I have supplied them with moths and butterflies, which they have devoured with avidity. They are extremely shy and wild. Although I have had between thirty and forty caged at different times, I have never succeeded in taming one. They are also very quarrelsome, and fight very fiercely, uttering a most piercing, penetrating sound, somewhat resembling a very shrill whistle.

The best known African lemurs are called galagos. With the exception of a kind from the West Coast, the great, or thick-tailed galago, of Mozambique and the Lower Zambesi Valley, is the largest of all the species. This animal is about the size of a cat of average dimensions; and, indeed, the peculiar manner in which it carries its thick bushy tail high above its back is highly suggestive of a pampered Persian cat. This bushy tail is about one-fourth longer than the head and body. The ears are unusually long.

It is confined to the maritime region, so far as I know never penetrating beyond the band of wood generally known as the mangrove forest. By the Portuguese it is named "rat of the cocoanut palm," that being its favorite haunt by day, nestling among the fronds; but if it be disturbed, performing feats of agility, and darting from one palm to another. It will spring with great rapidity, adhering to any object as if it were a lump of wet clay. It has one failing, otherwise its capture would be no easy task. Should a pot of palm-wine be left on the tree, the creature drinks to excess, comes down, and rushes about intoxicated. In captivity they are mild; during the day remaining either rolled up in a ball, or perched half asleep, with ears stowed away like a beetle's wing under its hard and ornamented case. I had half a dozen squirrels with one in the same cage; these were good friends, the latter creeping under the galago's soft fur and falling asleep. On introducing a few specimens of (elephant) shrew, the galago seized one and bit off its tail, which however, it did not eat. The food it took was biscuit, rice, orange, banana, guava, and a little cooked meat. Stupid during the day, it became active at night, or just after darkness set in. The rapidity and length of its leaps, which were absolutely noiseless, must give great facilities to its capturing live prey. I never knew it give a loud call, but it would often make a low, chattering noise. It had been observed at the Luabo mouth of the Zambesi, at Quillimane, and at Mozambique. When I had my live specimen at Zanzibar, the natives did not seem to recognize it; nevertheless, it may be abundant on the mainland.

In the warmer parts of Asia is found the slow lemur or loris. The name loris, by which all the slow lemurs are commonly known, is derived from the Dutch word *Loeris*, meaning a clown, and appears to have been applied to these animals by the Dutch colonists of the East Indian Islands. To the natives of India the slow loris is known either by the name Sharmind billi, "bashful cat," or Lajjar banar, "bashful monkey." It is an animal about the size of a cat; different individuals or races varying considerably in size, so that while some specimens do not measure more than 13 inches in total

length, others may reach as much as 15 inches, or even more. Its proportions are thick and clumsy; the head being broad and flat, with a slightly projecting and pointed muzzle. The large eyes are perfectly circular, and their pupils can be completely closed by the gradual contraction of the iris, which open from above and below, so that when the pupil is half concealed it takes the form of a transverse slit. The ears are short, rounded, and partly buried in the fur; and are, thus, very different from those of the galagos. The hind-limbs are only slightly longer than the others. With the exception of the muzzle and the hands and feet, the whole of the body is covered with a thick coat of very close and somewhat long woolly fur.

In the more common and larger variety, the color of the fur is ashy-grey above, tending to become silvery along the sides of the back, the under-parts being lighter, and the rump often having a tinge of red. The stripe on the back is chestnut-colored, and stops short at the hinder part of the crown of the head. The eyes are, however, surrounded by dark rims; between which is the white streak extending upwards from the nose. The ears, together with a small surrounding area, are brown.

The slow loris is found over a large area in the countries lying to the eastward of the Bay of Bengal. It occurs on the northeast frontier of India in the provinces of Sylhet and Assam, whence it extends southwards into Burma, Tenasserim, and the Malay Peninsula; while it is also found in Siam and Cochin China, and the islands of Sumatra, Java and Borneo.

Its food consists of leaves and young shoots of trees, as well as fruits, various kinds of insects, birds, and their eggs. It has been observed to stand nearly erect upon its feet, and from this advantageous position pounce upon an insect. It is generally silent, although sometimes uttering a low crackling sound; but when enraged, and especially if about to bite, it gives a kind of fierce growl. This animal is tolerably common in the Tenasserim provinces and Arakan; but, being strictly nocturnal in its habits, is seldom seen. It inhabits the densest forests, and never by choice leaves the trees. Its movements are slow, but it climbs readily, and grasps with great tenacity. If placed on the ground, it can proceed, if frightened, in a wavering kind of trot, the limbs placed at right angles. It sleeps rolled up in a ball, its head and hands buried between its thighs, and wakes up at the dusk of evening to commence its nocturnal rambles. The female bears but one young at a time. Many accounts have been published of the habits of the slow loris in confinement. While these creatures are apt to be fierce when first captured,

they soon become docile. They are very susceptible to cold, and when so affected are apt to be fractious and petulant.

I once had a tame loris which was especially fond of plantains, also partial to small birds, which, when put into his cage, he killed speedily; and, plucking the feathers off with the skill of a poulterer, soon lodged the carcass in his stomach. He ate the bones as well as the flesh; and though birds, and mice perhaps, were his favorite food, he ate other meat very readily, especially when quite fresh; if boiled, or otherwise cooked, he would not taste it. He preferred veal to all other kinds of butcher's meat; eggs, also, he was fond of, and sugar was especially grateful to his palate; he likewise ate gum-arabic. As flesh was not always to be had quite fresh, he was for some time fed upon bread sopped in water, and sprinkled with sugar; this he ate readily, and seemed to relish it. When food was presented to him, if hungry, he seized it with both hands, and, letting go with his right, held it with his left all the time he was eating. Frequently, when feeding, he grasped the bars in the upper part of his cage with his hind paws, and hung inverted, appearing very much intent upon the food he held in his left hand. He was exceedingly fond of oranges; but, when they were at all hard he seemed very much puzzled how to extract the juice. I have, upon such an occasion, seen him lie all his length upon his back, in the bottom of the cage, and, firmly grasping the piece of orange in both hands, squeeze the juice into his mouth. He generally sat upon his hind part (the hair of which was much worn by long sitting), close to the bars of his cage, grasping them firmly with his hind paws; he then rolled himself up like a ball, with his head in his breast, his thighs closely placed over his belly, and his arms over his head, generally grasping the bars of the cage with his hands also. In this position, and also without moving, he remains the whole day. Upon coming into the Channel, the cold weather affected him very much; he was seized with cramp, and I at that time placed him in a small box, which was filled with very soft down. This he felt so agreeable that, when cold, he never left it during the whole day, unless disturbed, and slept in it rolled up in the shape of a ball.

His temper, in cold weather especially, was very quick; but, in general, he was rather timid, and never offered any injury unless incautiously touched, teased, or provoked; he then made a shrill, plaintive cry, evidently expressive of much annoyance, and would bite very sharply.



STORY OF THE ECHIDNA.

One of the queerest ant-eating animals with which I am acquainted is the echidna, or spiny ant-eater. There are two species of this queer animal, which differ widely in appearance from the duckbill and are found over a larger area of territory.

Instead of mole-like fur, the echidnas have the upper surface of the head and body covered with a mixture of stiff hairs and short thick spines. The head is rather small and rounded, and has a long, slender, beak-like snout, covered with skin, at the extremity of which are situated the small nostrils. There are no external conchs to the ears; but the eyes are of fair size. The opening of the mouth is very small, and the tongue, which can be extended at great length, has the long, round form characteristic of all ant-eaters.

The skull is devoid of all traces of teeth, and remarkable for the slenderness of its lower jaw, and its generally bird-like form. Although there is nothing corresponding to the horny plates of the mouth of the duckbill,

both the palate and the tongue are thickly beset with small spines. The body of the echidnas is remarkably broad and depressed, with a sharp line of division between the spine-covered area of the back and the hairy underparts. The tail is a mere stump, and the short and sturdy limbs are armed with enormously powerful claws, varying in number from three to five on each foot. Although the front-feet are applied to the ground in the usual way, the hind-feet, in walking, have the claws turned outwards and backwards.

The males resemble those of the duckbill in having a hollow spur at the



THE ECHIDNA OR SPINY ANT-EATER.

back of the hind-foot, which is probably employed as a weapon in the contests between rival males during the breeding season.

The common echidna is a variable species, found in Australia, Tasmania and New Guinea, and characterized by having five toes on each foot, all provided with claws, those on the fore-feet being broad, while the others are narrow and more curved. In length the beak is about equal to that of the remainder of the head, and it is either straight or slightly turned upwards. The smallest variety inhabits Port Moresby, in New Guinea, and

attains a length of about fourteen inches, its distinctive feature being the shortness of the spines on the back.

The variety from the Australian mainland is larger, and the spines are of great length. Larger than either is the Tasmanian variety, in which the length may be nineteen inches, the very short spines on the back being partially or completely hidden by the fur, the dark brown hue of which is frequently relieved by a white spot on the chest, while the beak is unusually short.

The three-toed echidna of northwestern New Guinea is larger than any of these. Usually it has but three claws to each foot, but there is considerable variation in this respect, one specimen having five claws on the front, and four on the hind feet. The beak is bent downwards, and attains a length equal to about double that of the rest of the head. The short spines are generally white, and the color of the fur is dark brown or black, although the head may be almost white.

Echidnas are mainly nightly animals frequenting rocky districts, and subsisting almost exclusively on ants. They are generally found in the mountains, and the three-toed species has been taken at an elevation of between three and four thousand feet.

Although it is definitely ascertained that they lay eggs, much less is known of their breeding habits than is the case with the duckbill. According, however, to native reports, the young, which are probably two in number, are born during the Australian winter, generally in the month of May.



THE STORY OF THE MINK.

Among the fur-bearing animals that have been a source of profit to hunters and trappers is the mink, a very near relative of the polecat. The minks are divided into three families, the American, the Siberian and the European. The latter is generally known as the nertz or sumpf-otter (marsh-otter), and has no recognized European name, although some naturalists have agreed in calling it the European mink.

All of the minks are inclined to water, and their toes are partly webbed. The European and North American minks are such closely related animals that they cannot be even distinguished from one another externally. The European mink has, however, very generally a white upper lip, which is but rarely exhibited in its American relative. When the skulls of the two forms are compared together it will be found that in the American form the upper molar tooth is invariably decidedly larger than in the European; and it is on account of this difference that the two are regarded as specifically distinct from one another.

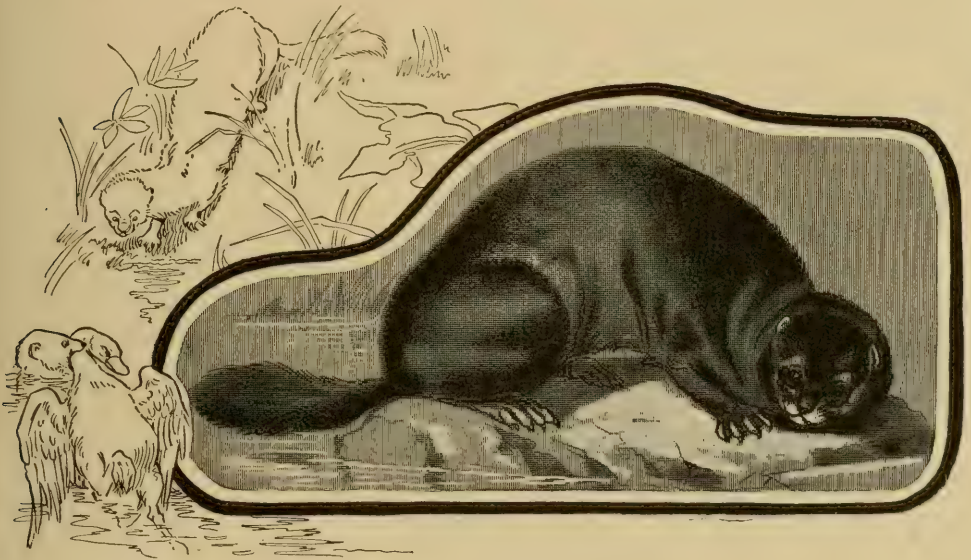
Like the martens, the minks have a uniformly long and somewhat bushy tail, differing markedly from that of the weasels; its whole length being approximately equal to half that of the head and body. The ears are smaller than in any of the allied forms, and scarcely appear above the general level of the fur. The coat consists of a dense, soft and matted under-fur, mixed with long, stiff and glossy hairs, the gloss being most marked in the fur of the upper-parts, while the hairs of the tail are more bristly than elsewhere. In color the mink varies from a light dull yellowish brown to a rich black chocolate-brown, the ordinary tint being a rich dark brown, scarcely, if at all, paler below than above. The tail is always decidedly blackish. Our illustration exhibits the white upper lip usually distinctive of the European mink. In both the eastern and western forms the chin is always white, although the extent of the white area is subject to individual changes. In addition to the white on the chin, there may also be small irregular patches of the same color on the under parts, while, in rare instances, the tail may also be tipped with white.

As a rule, the American mink is somewhat larger than the European, and in both the male is always larger than the female. The American form may vary in length from the tip of the snout to the root of the tail from fifteen to eighteen inches, while the length of the tail, inclusive of the hair, ranges from about eight to nine inches. The European mink is an inhabitant of Eastern Europe, occurring at the present day in Poland, Finland, and the greater part of Russia, although unknown to the eastward of the Ural Mountains.

The American species ranges over the greater part of North America, although not found in the extreme north of that continent.

In its general habits the mink, in both hemispheres, is thoroughly amphibious, and is therefore only found in districts where water is abundant. Indeed, these animals may in this respect be regarded as presenting precisely the same relationship to the polecat as is held by the water-vole to the land-vole. The mink not only swims and dives with facility, but can remain long under water, and pursues and captures fish by following them under logs or other places from which there is no free escape. It has thus been known to catch as swift and agile a fish as the brook-trout, and Audubon says that he has seen a mink catch a trout of upwards of a foot in length. It is remarkably strong for so small an animal, and a single one has been known to drag a mallard duck more than a mile, in order to get to its hole, where its mate joined in the feast.

Generally, the food of the mink consists of various aquatic creatures, such as frogs, crayfish and molluscs, but it will also eat various small aquatic animals, such as voles, as well as mice and rats, while in America it is reported to prey at times upon the comparatively large musquash. Marsh-frequenting birds also fall victims to the mink, and their eggs are also consumed. Other wild birds are, however, comparatively safe from the attacks of this animal, as its climbing powers are of the feeblest. Poultry are not unfrequently attacked; but in these and other attacks the mink does not exhibit that wholesale destructiveness characteristic of the stoat. In hunting, the mink has been often observed to pursue its prey entirely by



THE EUROPEAN MINK.

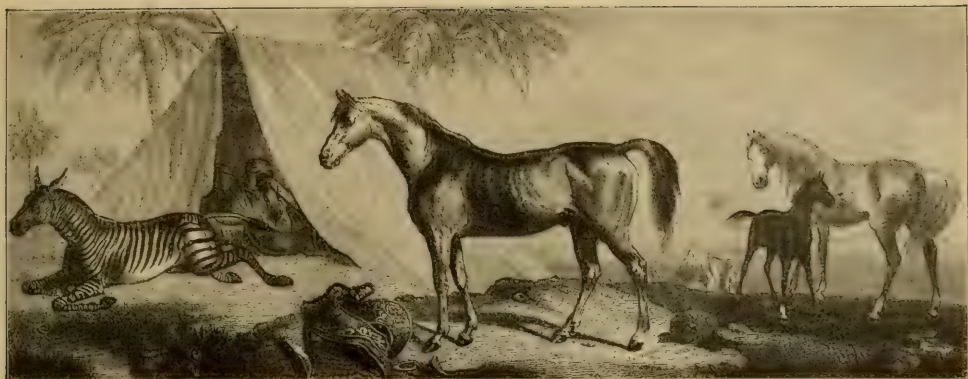
scent, and it may be observed on its hunting expeditions both by night and by day.

All who have hunted the mink bear witness to its extraordinary tenacity of life, the writer last quoted stating that he has known several instances of these animals being found alive after having lain for fully four-and-twenty hours with their bodies crushed flat beneath a heavy log. The countenance of the mink is described as at all times far from prepossessing, but when caught alive in a steel trap these animals have an expression almost diabolical.

Some years ago the fur of the mink was but little esteemed, and the price was at one time said to be so low as not to repay the cost of transport. Recently mink fur has, however, been more appreciated, and the animal has consequently been more vigorously trapped, with the result that in some districts there has been a considerable reduction in its numbers. In 1865 the value of a good mink skin was reported to have reached five dollars, and at that date upwards of six thousand of these skins were annually exported from Nova Scotia alone. It is stated that while for two decades the total number of European mink skins averaged fifty-five thousand, the exports of American mink reached one hundred and sixty thousand, but in the year 1888 the number of American was upwards of three hundred and seventy thousand. At the latter date the value of Russian mink varied from about one to four shillings per skin, while American skins fetched from four to ten shillings. Much higher prices were, however, current a few years previously.

American mink always obtains higher prices than Russian, the best skins coming from Alaska and New England.

The Siberian mink is a little-known species inhabiting the districts to the eastwards of the Yenesei River, but unknown in Siberia. It is more like a polecat in general appearance, having similar dark and light markings on the head and face. The color is a clear rich tawny brown, as dark below as above.



THE STORY OF THE WAPI.

On the Semliki River, near the borders of the great Congo forest, I first heard of and later saw one of the queerest animals in the known world. The natives called it the wapi, but a naturalist of the present day, who has learned much about it, has given it the name of okapi.

A little to the east end of the middle of Africa is a chain of lakes running nearly north and south. The great Lake Tanganyika is the southernmost, north of this is Lake Kivu, whose waters flow south into Tanganyika, and then passing over a high volcanic range we come to the lake known as the Albert Edward Nyanza, stretching northward from the shores of which are Mountains of the Moon, the Rewenzori range. Keeping in the valley to the west of this range the traveler passes along the Semliki River, whose waters flow northward, and eventually reaches the Albert Nyanza, the source of the Nile.

The region of the Semliki River is in many respects a most remarkable one. A few miles east from its banks are snow mountains 25,000 feet high. At no great distance on the west are sources of the Aruwimi, the great tributary of the Congo River. To its west, also, for hundreds of miles, stretch the northeastern extensions of the great Congo forest. Along the shores of the Semliki the British protectorate of Uganda and the Congo Free State meet one another. It is here that Stanley and I saw the distant

Rewrenzori range and heard from natives of the existence in the forest of a large quadruped, neither antelope nor zebra, and as large as a horse.

It is to this region that Sir Harry Johnston, High Commissioner of Uganda, traveled in the autumn of 1900 in order to explore the confines of his protectorate before returning home. Sir Harry is an ardent naturalist, a really great collector, an observer, and an artist. Many a new bird, beast and plant from Kilimanjaro, Nyassaland and Uganda do men of science owe to him. On the present occasion he was eager to obtain new things and was well equipped for the purpose and well provided with men. He has sent rich collections to the Natural History Museum as a result of this journey. He was especially anxious to see and if possible secure the enigmatical quadruped which I had reported to exist in these forests.

It must be borne in mind that the larger quadrupeds live in the open prairie or frequent only the borders of the African forests, and, further, that few of the natives excepting the peculiar dwarfs, the Akkas, penetrate far into the gloomy depths of these vast tree-grown regions. Sir Harry himself traveled for a week in the dark, steamy recesses of this equatorial forest. He describes the sense of mystery and oppression with which the solemn gloom, the choking heat, and strange silence filled him as well-nigh overpowering. It is not to be wondered at that the blacks avoid these primeval fastnesses.

It is among the trunks of these forests trees, whose foliage is densely woven overhead so as to exclude the light of day, that the strange animal of which Sir Harry was in search lives, coming here and there to "clearings" due to the decay and fall of the trees, in order to feed on the foliage.

It might well be that this dark vapor-laden forest had persisted from remote geologic ages, and that strange animals, survivors of pliocene and miocene times, still harbored there unknown to man, unchanged, cut off from the struggles of the outer world.

Sir Harry failed to get a sight of the animal, but he obtained from natives two bands made from its skin, and learned that the animal was called by them "okapi." The pieces of skin had the hair preserved, and this was colored very dark brown and white in alternate bands, like the pelt of a zebra. They were sent home and were considered by Dr. P. L. Selater, the secretary of the Zoological Society of London, to indicate a new kind of zebra, to which he gave the name *Equus Johnstoni*.

At a station of the Congo Free State, not far from the Semliki River, Sir Harry Johnston met the officer in charge, a Mr. Ericsson. This gentle-

man promised to do all in his power to obtain a specimen or specimens of the okapi for Sir Harry from the natives of his district. Some months later, when Sir Harry Johnston had returned to the more civilized portion of the Uganda protectorate, he received by messengers from Mr. Ericsson a complete skin, including the hoofs, and two skulls of the okapi.

One of the most remarkable facts in this story is that Sir Harry, with-



THE WAPI OR OKAPI.

out access to books and specimens for comparison, such as men of science have at their command in European museums, immediately determined with complete accuracy the nature of the okapi. He made—and has recently published—a sketch of the animal, showing it as he supposed, from the examination of skin and skull, it would have appeared when living. Its cloven hoofs showed that it was not of the zebra tribe, but related to

the antelopes and giraffes; and Sir Harry went so far as to say that it was a short-necked hornless giraffe—similar to the *Helladotherium*, the bones of which have been found at Pikermi, near Athens, and were reconstructed as a complete skeleton by Professor Gaudry, of Paris. Sir Harry suggested that the okapi must be considered as a living survival of that animal, and assigned it to the genus *Helladotherium*.

This was extraordinarily correct and sound reasoning. It has been abundantly confirmed by careful study of the specimen sent to London excepting that it has seemed necessary to separate the okapi, on account of some minor features in the structure of the skull, from *Helladotherium*. The okapi is now known as *Ocapia Johnstoni*.

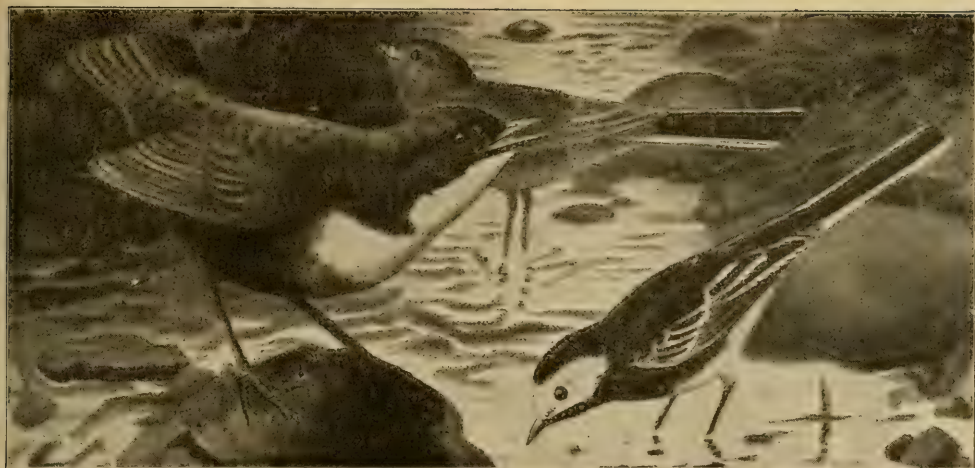
Sir Harry Johnston at once dispatched the okapi's skin and two skulls to the Natural History Museum.

He rightly declared this to be the most remarkable discovery in the zoology of Africa made in the last hundred years.

The photographs here reproduced show the animal as set up by Mr. Ward and an enlarged view of the head. The shoulder is higher as compared with the rump than in Sir Harry's restoration, and the neck is somewhat longer than it seemed to him, and straight as is that of a giraffe. Probably the okapi, like the giraffe, carries its neck habitually sloping forward so as to give a continuous straight line from the back of the head to the root of the tail. A very interesting feature is the presence of two little tufts on the forehead, which correspond to and represent the horns of the giraffe, though they cannot themselves be called horns. An examination of the skulls of the okapi show that there is no bony outgrowth corresponding to these knobs, although the skull is raised on each side above the orbit into a small domelike eminence.

The coloring and marking of the hairy hide of the okapi is very peculiar. Its pattern is well shown in our illustration. The body is of a rich maroon-brown color.

The tract of forest inhabited by the okapi is about as big as the principality of Wales, and there may be some 2,000 or 3,000 head living there. It is undoubtedly a true inhabitant of the forest, elusive and difficult to discover. Probably we shall soon hear more of it and receive additional specimens, though it is not likely, on account of its frequenting the forest depths, to be threatened or exterminated by too eager sportsmen for long years to come.



STORY OF THE WOLVERINE.

One of the great states of the Union, Michigan, is given the nickname of an animal which was once plentiful within its boundaries, but is now nearly extinct in the United States—the wolverine, or, as it is called by naturalists, the glutton.

While it is a very different looking animal from the weasel, and much longer in size, naturalists classify it as a member of the weasel family. It inhabits the northern regions of both the Eastern and Western Hemispheres. It has the same number of teeth as the marten, but they are large and powerful and most nearly resemble the teeth of hyænas.

The whole animal is heavily and rather clumsily built, and walks with the greater part of the soles of the feet applied to the ground. The limbs are thick and rather short; the feet are provided with long, curved claws, and have their soles thickly haired. The back is much arched, and both the head and tail are carried low. The whole appearance of the animal is that of a bear cub, with a superadded tail. The head is broad and rounded, with a rather short and pointed muzzle, small and widely-separated eyes, and small rounded ears, projecting but little above the general level of the fur. The tail is comparatively short, thick, and bushy, with hairs varying

from six to eight inches in length. The fur of the body and limbs is rather coarse, long and thick, and there is also a thick woolly under-fur. The general color is dusky or blackish brown, but there is a distinct band of chestnut, or some lighter tint, commencing behind the shoulders, then running along the flanks, and meeting its fellow at the root of the tail. The front and sides of the head are light grey, while upon the throat and chest there may be one or more light spots. The limbs and under-parts, together with most of the tail, are very dark. The claws are nearly white.

There is considerable individual variation in the size of the glutton, the length of the head and body in seven examples measured by me varying from twenty-six and one-half to thirty-six inches, and that of the tail, with the hairs at the end, from twelve and one-half to fifteen inches. About twenty-nine inches may, however, be set down as the length of the head and body in average-sized specimens.

In Europe the glutton appears to have been long regarded as a kind of fabulous creature, and it is remarkable that it is known by the same name—*vielfrass*—in almost all the continental countries. What may be the meanings of this name is uncertain, some writers considering that it is compounded of two Swedish words signifying rock-cat, while others refuse to admit its Scandinavian origin. By the French Canadians the animal is termed *Carcajou*, and by the English residents of British North America, *Quickhatch*, the latter, and probably also the former, being derived from some almost unpronounceable native name.

The glutton is a forest-haunting animal, and in America is to be found in all suitable districts to the north of the United States as far as the Arctic coast, traces of its presence having been observed on Melville Island, in about latitude 75° . Its southern limits on the eastern side of the continent may be set down as about latitude 42° or 43° , or, roughly speaking, that of Lake Erie, but on the western side it descends lower, having been definitely recorded from Salt Lake, while in the mountains it may extend as far as Arizona and New Mexico. The animal is, however, now virtually exterminated throughout the United States.

In Europe the glutton is found at the present day in Norway, Sweden, Lapland, the north of Russia, namely, in the neighborhood of the White Sea, in the Government of Perm, and the whole of Siberia, and Kamschatka. In the time of Eichwald it was still to be found in Lithuania, but is now extinct there. Solitary specimens have, indeed, been killed in Saxony and Brunswick; but these must be regarded merely as stragglers, and not as

indicating that the range of the species extended so far south within historic times.

At an earlier period of the earth's history the glutton ranged, however, to the British Isles, its fossilized remains having been discovered. Evidence of the former existence of the glutton on the continent has also been obtained in the caves of the Dordogne in the south of France.

In habits the glutton is almost exclusively a night animal, there being but few instances of its having been seen abroad during the day, and in two of these cases the animal was seen to sit up and shade its eyes with its paws, as if suffering from the unaccustomed light. The glutton does not



THE WOLVERINE OR GLUTTON.

hibernate, and there is no marked difference in the color of the winter and summer coat. In spite of its clumsy-looking appearance the animal when disturbed can make off at a very rapid pace, and hunters who have occasionally seen a glutton in the shades of evening speak of the hopelessness of pursuing it. It likewise ascends rough-barked trees with facility, although it is said that its climbing powers are only exerted when it scents food. In the pursuit of prey the glutton will readily swim rivers. As a rule it is silent, although when attacked it will give vent to angry growls.

Gluttons are found either solitary or in pairs, but generally solitary. During the day they live concealed in holes in the ground, which are usually

their breeding-places, and which are frequently the deserted lairs of bears. In North America the young are born in June or July, the number of individuals in a litter being, according to Coues, generally four or five, but it is stated that there are sometimes only a pair. The young remain with their mother till the following winter, when they have to shift for themselves. The Cree Indians state that the mother is exceedingly fierce when defending her offspring, and at such times will not hesitate to attack human beings.

In regard to food, the glutton will devour any animal that it can catch and overmaster, and that it is by no means averse to carrion. The activity of the animal is such that it can at times capture such nimble prey as hares and grouse, while disabled or weakly deer are always successfully attacked. The stories of its attacking healthy, full-grown reindeer are, however, improbable. Foxes, rabbits, marmots, etc., are dug out from their burrows and eaten.

The glutton is the particular foe of the beaver and frequently digs that animal out of his house of mud and sticks even in midwinter when the beaver's home is solidly frozen.



THE STORY OF THE SKUNK.

The most ill-favored of all American animals is the skunk, owing to the odor of a secretion which it is able to eject with great force. The secretion is contained in a pair of glands and is ejected only when the creature is attacked or irritated.

So forcibly can the amber-colored fluid be ejected that it will carry from a distance of thirteen feet to a little over sixteen feet. It appears that there is a marked difference in the intensity of the odor of the secretion in different individuals of the common skunk, which is probably in part due to the age of the animal, and in part to the length of time which has elapsed since the preceding discharge took place. When freshly ejected, the fumes from the secretion are pungent and acrid in the extreme, and are capable of producing extensive swelling of the respiratory passages. When inhaled without the admixture of a large amount of atmospheric air the unhappy victim loses consciousness and breathes stertorously, the temperature falls, and the pulse slackens, and if the inhalation were prolonged the results would doubtless prove fatal.

The following story shows the lasting effect and strength of even one drop of skunk secretion:

"A settler in the Argentine Republic started one evening to ride to a dance at a neighbor's house. It was a dark, windy evening, but there was a convenient bridle path through the dense thicket of giant thistles, and, striking it, he put his horse into a swinging gallop. Unhappily the path was already occupied by a skunk, invisible in the darkness, that in obedience to the promptings of its insane instinct, refused to get out of it until the flying hoofs hit it and sent it like a well-kicked football into the thistles. But the forelegs of the horse as high as the knees were liberally sprinkled, and the rider, after coming out into the open, dismounted, walked away twenty yards from his animal, literally smelled himself all over and pronounced himself clean. Not the smallest drop of the diabolical spray had touched his dancing shoes so far as he could discover. Springing into the saddle he proceeded to his journey's end and was warmly received by his host.

"In a little while the other guests began exchanging whispers and significant glances. Ladies coughed and put their handkerchiefs to their noses, and presently began to feel faint and retire from the room.

"The settler began to notice that there was something wrong, and presently discovered the cause. He had been the last person to remark that familiar but abominable odor, rising like a deadly vapor from the floor, conquering all other odors and every moment becoming more powerful. A drop had touched his shoe after all!"

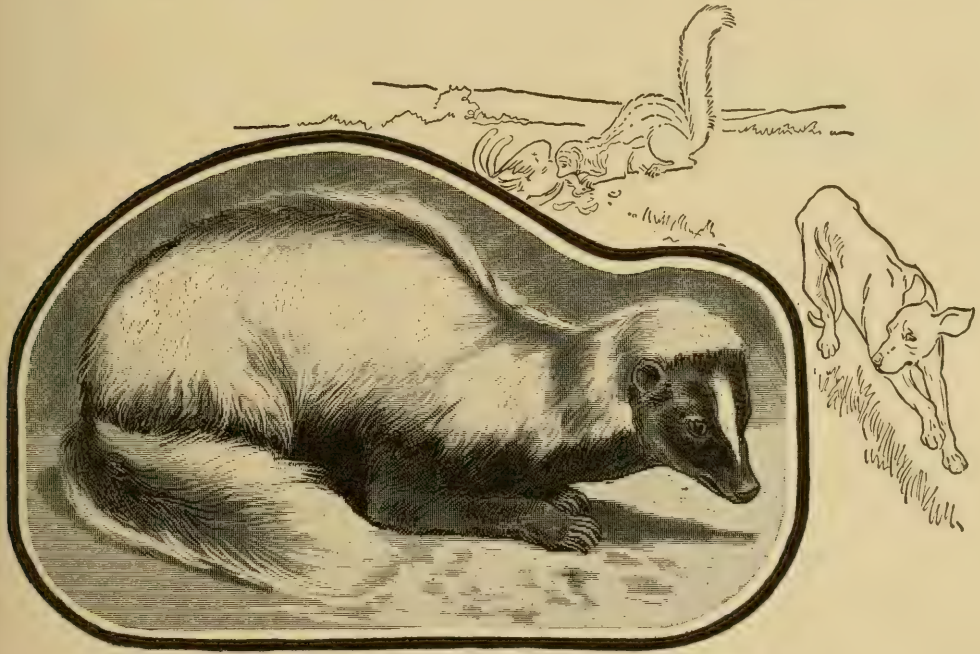
The skunk, of which there are several varieties, is an exclusively American animal.

The common skunk is an inhabitant of Northern and Central America, ranging from Hudson's Bay in the north to Guatemala in the south, and it may be compared in size to a rather small cat, the length of the head and body always exceeding a foot. It is a stoutly built animal, with a small head, short and rounded ears, a moderately long body, and legs of medium length. The long and bushy tail is thickly clothed with very long and fine hair, and is, as already mentioned, generally carried curled over the back when the animal is walking. Its length, inclusive of the hair, is somewhat less than that of the head and body. The general color of the moderately long hair of the body is black or blackish, and, although there is a great amount of individual variation, the white markings usually take the form of a streak on the forehead, a spot on the neck, and two stripes running down the back. The tail is black, more or less mixed with white, or merely tipped

with the same. In some cases the white stripes do not extend beyond the neck, so that the back is entirely black.

The long-tailed skunk from Mexico differs by its longer and more bushy tail, of which the whole length is not less than that of the head and body.

More distinct is the lesser skunk, ranging from the southern United States to Yucatan and Guatemala. This species never exceeds a foot in length from the snout to the root of the tail, the whole tail being distinctly



THE WHITE-BACK SKUNK.

shorter than the head and body. It has four white stripes on the body, together with some spots, and the tail is tipped with white.

In South America the group is represented by a very distinct species known as the white-backed skunk. This skunk differs from all the others by its heavier build and more pig-like head and snout. The ears are extremely small, and the tail is shorter and less bushy than in the other skunks. In size this species is the largest of the group, some specimens attaining a length of about twenty-four inches, exclusive of the tail, although the more usual dimension is about eighteen inches. The color is even more

variable than in the common skunk, but in general the two white stripes on the back are very wide. The tail is either pure white or black and white.

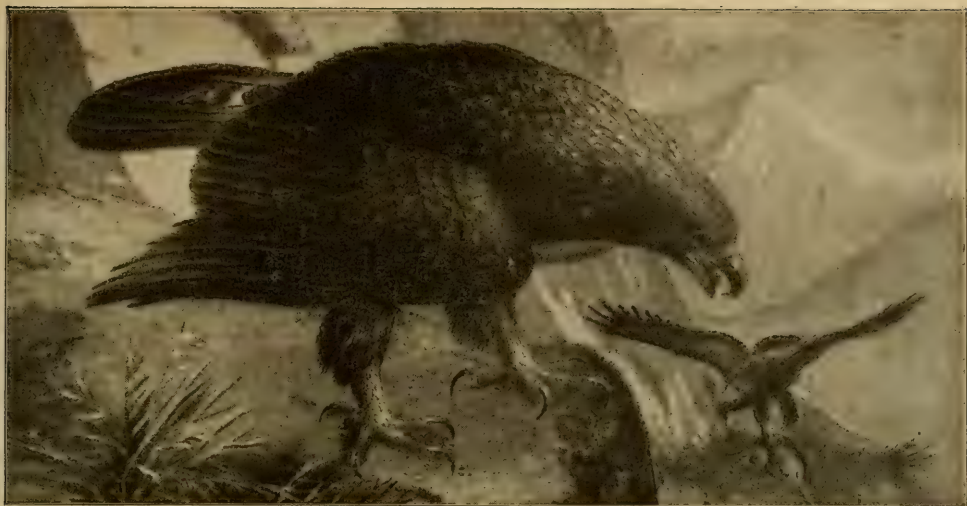
The range of this species extends northwards from Patagonia and Chili through Central America to Texas.

The habits of all the species of skunks are very similar.

Skunks are good climbers, but appear to prefer clearings and open glades rather than dense forests, and they may be frequently found in the neighborhood of human dwellings, although in Patagonia and the Argentine pampas they inhabit perfectly open country. In common with other members of the family they are largely night animals, but may be met with walking abroad in the evenings in North America, while in Patagonia the white-backed species, conscious of its power, roams by day about the open plains, and fears neither dog nor man.

This indifference to the presence of other creatures is, indeed, one of the most striking characteristics of the skunk, and is doubtless due to the immunity of attack which these creatures possess, owing to their nauseous secretion. In Nicaragua the skunk goes leisurely along at night, holding up his white tail as a danger-signal for none to come within range of his nauseous artillery. So indifferent is the common skunk to the presence of man that in many parts of the United States these creatures are not unfrequently run over in the evenings on the roads by passing vehicles. The peculiar and conspicuous coloration of the skunks is generally regarded by naturalists as belonging to the class of so-called "warning colors." Such warning colors would seem to benefit the would-be enemies rather than the conspicuous forms themselves. But the conspicuous animal is greatly benefited by its warning colors. If it resembled its surroundings, like the members of the other class, it would be liable to a great deal of accidental or experimental tasting and there would be nothing about it to impress the memory of an enemy and thus to prevent the continual destruction of individuals. The object of warning colors is to assist the education of enemies, enabling them to easily learn and remember the animals which are to be avoided.

In the Adirondack region the chief food of the common skunk consists of mice, salamanders, frogs, and the eggs of birds that nest on, or near the ground, while such hens' nests as are met with are sure to be robbed, and an occasional raid is made on the poultry-yard. A large number of beetles, grasshoppers, and other insects is likewise consumed by these animals.



THE STORY OF THE BIRDS.

Hairy Pelican—Pelicans are easily recognized by their enormous beaks, on the lower part of which is a huge pouch which may be compared to a bag-net, to which the upper part of the beak acts as a lid. The body is large, the neck long and slender, the head small, the legs short, the webbed feet having very long toes. The plumage of the crested pelican is white, tinged with gray, black wings, and the feathers of the crown crinkled and lengthened into a large crest. The eye is silver white, the upper part of the beak grayish-yellow, the pouch blood red, shaded with blue, and the feet black. The range of the crested pelican is in Europe. Pelicans go in enormous flocks in the neighborhood of swamps and rivers. They live on fish. The eggs, two to three in number, have thick, bluish-white shells incrustated with chalky matter.

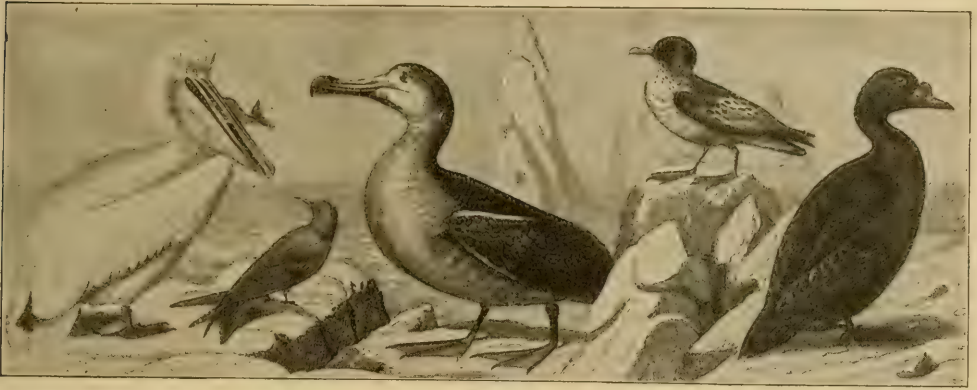
Sooty-Tern—This is the best-known member of the family, sometimes known as the black-tern. The under-parts of the plumage are dark red and gray, as are also the upper tail coverts and the tail; the beak, the chin, the sides of the face, and the crown are nearly black. Like other members of the family, its beak is straight and rather slender. The black tern breeds in col-

onies, the nest being situated in marshes, and formed of decayed pieces of plants or heaps of wreck, which rise and fall with the tide; sometimes they are placed on the firmer hummocks of bog in the middle of shallow parts. The eggs are three in number, of various shades of ochreous clay, olive-brown, or olive-green, blotched with dark brown, especially at the larger end. The food of this tern consists chiefly of beetles and dragon-flies, with some small fish; it is also very partial to leeches.

White Albatross—As its name indicates, the prevailing color of the plumage is white but with a yellowish cast. Even the beak and feet are whitish. The span of the wing is from ten to twelve feet, although this bird only weighs seventeen pounds. Its home is in the south seas, but it occasionally gets north of the equator, where it is sometimes known as the wandering albatross. The name albatross is a corruption of the Spanish word *Albatraz* meaning a gannet. It was given to them by the old-time voyagers. All the albatrosses are ocean birds and rarely visit the land except in the breeding season. They are almost constantly on the wing, and are equally at ease in the stillest calm and the most furious gale. The manner in which it just tops the raging billows and sweeps between the gulfy waves calls forth wonder and admiration. Although a vessel running before the wind frequently sails more than two hundred miles in the twenty-four hours, and that for days together, still the albatross has not the slightest difficulty in keeping up with the ship, but also performs circles of many miles in extent, returning again to hunt up the wake of the vessel for any substances thrown overboard. They make a round nest of tufts of grass, clay and sedge which stands up from the ground, and at the proper season contains a single white egg about the size of that of the swan. The egg is held in a kind of pouch, so that the bird has to be driven from the nest before one can see whether the egg is there.

Cape Pigeon—From its slight resemblance to a dark-colored pigeon, the bird properly known as the Cape petrel is commonly called the Cape pigeon. It is a bird of medium size and is easily recognized by the sooty head and neck, the dusky and white plumage of the upper parts and spotless white underparts. It is an inhabitant of the South Atlantic and South Pacific Oceans. They follow vessels in great numbers, are so eager for scraps thrown over the ship's side, that any number of them have been caught with small hand-nets. In stormy weather they frequently come close into land. When gracefully hovering in the air, the bird may be seen to make a sudden dart downward to the water, in order to secure some floating mor-

sel of food it has espied, and on such occasions will dive readily. It also throws up its tail after the manner of a duck, and thus fishes up bits of food from slight depths. When caught and placed on deck, it has to run some distance with outstretched wings before being able to rise; and when first



GREAT PELICAN. SOOTY TERN. WHITE ALBATROSS. CAPE PIGEON. SCOTER DUCK.



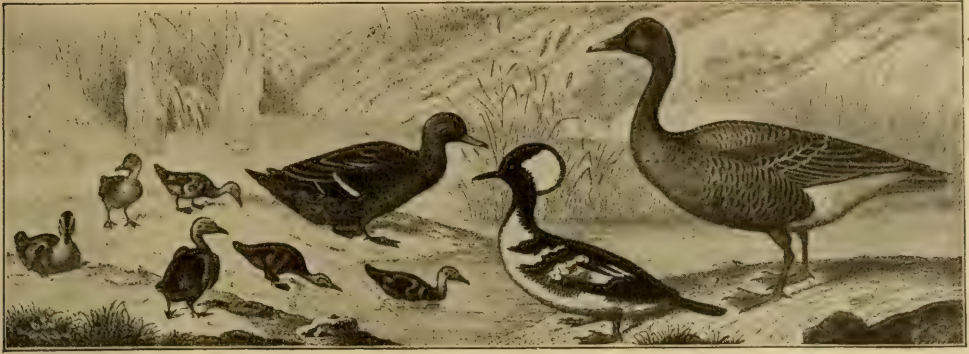
HOOPER SWAN. EUROPEAN TEAL. MUTE SWANS. LITTLE GREBE. IVORY GULL. CRESTED GREBE.

hauled in or handled, invariably ejects from its mouth or nostrils a reddish oily fluid. These petrels breed on Tristan da Cunha and Heard Island, and also on some of the Antarctic Islands; on Heard Island their nests are made in holes in low cliffs,

Scoter Duck—The marine duck known as scoter is found in the northern part of each hemisphere. Its general color is black, with or without white on the wing. The American scoter, which is found both in North America and Japan, is distinguished by orange yellow at the base of the beak instead of blackish-blue. They arrive from their summer quarters in September and October and return in the following April and May. Islands in the rivers and lakes of the Arctic regions, where the ground is covered with dwarf birch and willow, form the favorite breeding-grounds of the scoters; and the eggs, which are usually from five to nine in number, are deposited in a mere hole in the ground; those of the common species being grayish-buff in color. Although rather awkward walkers, all the scoters fly with rapidity, and are fully equal to their allies in swimming and diving. Their food in winter consists of various small species of water life, and in summer of water-plants; their flesh being almost uneatable.

Teal Duck—The beautiful little duck known as teal measures only about fourteen inches in length. The male is beautifully colored, having bright green bands bordered with buff on the side of the head, with black, green, purple and white showing in the wings, and the white breast spotted with black. The upper plumage of the female is two shades of brown. The teal is found all over Europe and Asia and eastern North America. The teal of Europe and Asia winter in India and North Africa. The American blue-winged teal is easily distinguished by its blue wing-coverts and a white crescent between the beak and eye. In western America is found a cinnamon-teal with a chestnut-colored head. The common teal breeds either among reeds and sedge on the margin of lakes and swamps, or on boggy moors; the nest being a large structure composed of water-plants, lined with feathers or down, and the number of eggs in a clutch varying from eight to ten in Britain, and from ten to fifteen in Lapland. When unmolested, teal feed both by night and day, but when much shot at they become mainly nightly feeders. In India, where they arrive by thousands in the cold season, teal frequent large sheets of water in the daytime, and resort to rice-fields and shallow marshes in the evening. Nearly as swift on the wing as pintail, teal turn and twist in the air with a rapidity second only to the cotton-teal, and they have a habit after being flushed of dropping suddenly again. They swim easily, but not very rapidly, and they cannot dive to much purpose, so that a wounded bird, unless there are weeds near, under which it can lie with only the bill above water, has, as a rule, but a poor chance of escape. On the land, if the ground be fairly smooth, they walk with tolerable ease;

but it is rare to see them, as one often sees the wigeon, well out on the dry sward, walking for pleasure. Their chief food is of a vegetable nature, but they also consume water-insects and molluscs. The common teal is usually



MALLARD DUCK.

HOODED MERGANSER
DUCK.

BEAN GOOSE.

SCARLET
FLAMINGO.

GREAT HERON.

EUROPEAN CRANE.

WHITE STORK.

PURPLE HERON.

seen in India in moderate-sized parties, but occasionally in large flocks. In March they associate in pairs, and then afford very pretty shooting when lying on the water beneath the steep banks of the larger rivers. The teal is

the easiest of all ducks to net and snare; immense numbers being captured during the cold weather in India, and kept alive through the summer in specially constructed "tealeries."

Mute Swan—It is best known in the British Islands as a domesticated bird, but there is little doubt that there are some wild specimens. The mute swan may be easily recognized by the color of its beak, in which the base is black and the point orange-red. It is found all over Europe and in some parts of Asia, and during the winter enters Northern Africa, Egypt and Northwestern India. While swimming, the mute swan is the most graceful of all its kin, being the one in which alone the neck is bent in true "swanlike" form. Deriving its name from the absence of any cry in the domestic race, it appears that wild birds trumpet like the whooper. The nesting-time—during which the male bird displays extreme pugnacity—takes place in May; the nests being generally built in association, and the number of eggs in each varying from five to eight.

Little Grebe—This bird is distinguished from the other grebes by its smaller size, measuring only sixteen inches in length, and by the chestnut hue of its lower neck. It is found in northern Europe and Asia. The eggs of the grebe differ from those of the divers in the creamy white color of their shells and their green tinge. The usual number is three or four. When pursued these birds seldom take to the wing, but nearly always try to escape by diving.

Crested Grebe—The largest member of the grebe family is the crested grebe, which measures from twenty-one to twenty-two inches in length. The grebe is a water bird, preferring fresh water to salt. The crested grebe is found in almost every part of the eastern hemisphere. In its summer plumage it may be recognized by its chestnut-colored ear-coverts and white breast, while in winter it has a white stripe over the eye. The head is ornamented with colored ruffs, tufts or patches.

Ivory Gull—Conspicuous on account of its uniform delicate white plumage, faintly suffused with a rosy tint, in marked contrast to which stand out the jet black legs and greenish yellow beak, the lovely ivory-gull alone represents a distinct member of the gull family. An inhabitant of the Arctic seas, this gull wanders into temperate regions during the winter; its breeding-places being in Spitzbergen and other regions in the far north. In contrast to the snowy white of the full-grown, the young of the ivory-gull are spotted with black.

Mallard Duck—This is the ancestor of the domestic duck. The mallard is

characterized by the male being more brightly colored than the female, except during the breeding-season; and by the brilliancy of the wings in both sexes at all times. In winter the male has the four middle tail-feathers curled upwards; the head and neck are brilliant velvety green, and separated



SNOWY HERON.

AVOCET.

EUROPEAN PLOVER.

ROSEATE SPOONBILL.

CRESTED
PENGUIN.SEA
SWALLOW.

CORMORANT.

WHITE TROPIC BIRD.
FRIGATE PELICAN.

by a white collar from the rich chestnut of the breast; while the wing-spectulum is a brilliant metallic violet, bounded in front by a black and then a white bar, and behind by two similar bands. The beak is yellowish green, and the legs and feet orange-red. In length the bird measures about twenty-

two inches. The female at all times, and the male in the breeding-season, have the wings colored as above, and the whole of the rest of the plumage variegated with dusky and ochre, the former appearing in the center of the feathers and on the upper-parts, and the latter on the edges of the feathers and lower-parts. The mallard inhabits the whole of the Northern Hemisphere, although its chief range is restricted to the zone lying between the Arctic Circle and the Tropic.

Hooded Merganser—The mergansers are better known by their common name goosander. Very different from any of the family is the hooded merganser, distinguished by the black beak being shorter than the head, and more especially by the full semicircular, erect and compressed crest of hair-like feathers. In the male the head and upper neck are black, with the exception of the hinder part of the crest, which is white edged with black; and the white breast is marked on each side by two black bands. Mainly North American, where it ranges from Alaska to Mexico, this merganser is a casual visitor to Europe. Although in Europe the mergansers generally frequent the coast, those which visit India are more commonly observed on inland waters. All are strong, heavy fliers, and most expert swimmers and divers; but on the land their movements are awkward and ungainly. Their food consists entirely of fish, molluscs, and shell fish, most of which are procured by diving; and in consequence of this diet their flesh is unpalatable in the extreme. When fishing in flocks, as is often the habit of the goosander, the whole party may frequently be seen to dive at the same time; although not uncommonly a few remain above water as if to act as sentinels. While the red-breasted merganser nests on the ground among bushes, heather, or long grass, the goosander nearly always, if not invariably, selects a hollow tree, or, failing that, a cleft in a rock, as a breeding-place, sometimes taking advantage of the nest of a crow or other bird. The creamy-white eggs are from eight to twelve in number; and the young, as soon as hatched, are carried down one by one from the nest to the water in the beak of their parent. When floating at ease the goosander sits as high in the water as a duck but when swimming settles down as deep as a cormorant.

The Bean Goose—Well known in Great Britain, the bean goose may be readily distinguished from the gray-leg goose by the black nail of the beak; the middle portion of the beak being orange-yellow, and its base black; while the legs and feet are also orange-yellow or orange. This goose ranges over the greater part of the northern half of the Old World, occurring

during the winter in Britain, the shores of the Mediterranean, India, and Japan. It is, however, strictly a northern bird only breeding in Scandinavia to the north of latitude 64° , and in Siberia on the tundras near lakes and pools beyond or near the limits of forest.

Scarlet Flamingo—The Persians gave this bird the name of "red goose."



HERRING GULL.

BOOBY.

DARTER.

CHINESE MANDARIN DUCK.



PATAGONIAN PENGUIN.

NORTHERN LOON.

PUFFIN.

RAZOR-BILLED AUK.

although it bears a more striking resemblance to the stork. The legs are of great length; the neck also is extremely long and slender. The whole of the plumage is rosy white, with the exception of the quills of the wings, which are black, and the wing-coverts, which are a light scarlet. The naked skin around the eyes is yellow; the beak is rosy red at the base and black at the tip,

and the legs and feet are pinkish-red. The true scarlet flamingo is an American species, with the general color of the plumage a full vermillion scarlet. Flocks of flamingoes, as they may be seen by the lakes, form one of the most wonderful sights in the world. They number tens of thousands, and massed upon the water look like huge rosy islands. When in the air they may be compared to a big cloud at sunset.

Although a wader, the flamingo can swim well in deep water. Their chief food consists of various water-plants, which are pulled up from beneath the surface. When feeding, the flamingo turns its head the wrong way up, in which position its bent beak forms a most efficient spoon-like instrument. The nests are in the form of round basin-shaped elevations of mud placed in close continuity on the mud-flats. They may vary from two to six inches in height, but the majority are very shallow, and present somewhat the appearance of a number of plates spread over the plain. Other single nests are situated in the water, and are in consequence much taller. The eggs, two in number, have a chalky external coating, beneath which is a greenish blue shell. During incubation the birds have their long red legs doubled under their bodies, the knees projecting as far as beyond the tail, and their graceful necks neatly coiled away among their back feathers, like a sitting swan, with their heads resting on their breasts.

Crane—Cranes are birds of large size, with plumage either gray or white. They are found on extensive plains and swamps and are capable of long and powerful flight. In length, the common crane measures from 43 to 48 inches and is found in Europe and Central and Northern Asia, visiting India, Persia, South China, and Northern Africa in winter, and passing through Japan on its migrations. Its plumage is gray; the naked part of the crown reddish, the sides of the face and neck white. The windpipe is lengthened and arranged in coils which enables them to utter, when alarmed or on the wing, a loud trumpet-like call, which can be heard at a distance of a couple of miles. They never perch on trees,—all the cranes build on the ground; their huge nests being placed in swamps, and the two or three eggs having a greenish color, more or less spotted with reddish.

White Stork—In this long-legged, long-billed bird the plumage is a pure white, with the exception of the greater wing-coverts, which are black. The beak and legs are red and the bare space around the eye is black. The length varies from forty-two to forty-four inches. With the exception of the extreme north, the stork ranges over the whole of Europe, although not breeding everywhere, and being merely an irregular visitor to the British Islands.

Eastward its range extends through Turkey and Persia to central Asia and a great part of India, while in winter the bird visits northern Africa in large numbers. In France, where it is much persecuted, it is now only a passing visitor; but it breeds in large numbers in Holland, Germany, and indeed over the greater part of central and eastern Europe, where it enjoys protection on the part of the inhabitants. The stork has become thoroughly habituated to human habitations and the presence of man, by whom it is esteemed, not only on account of its value as a scavenger, but likewise from its well-known fidelity to its young, which has become proverbial. In Palestine, where they only exceptionally breed, storks make their appearance at the latter part of



A GROUP OF PENGUINS.

March on their northern journey, while in Holland and Denmark they generally arrive about the middle of April. They arrive and depart in immense flocks; and on their arrival spread themselves over the country in search of food, which comprises small mammals and birds, reptiles, frogs, insects, etc. In most parts of Europe the stork generally builds on chimneys, where boxes or other receptacles for the nest are frequently placed for its accommodation; and as it returns year after year to the same spot, the nest, which is originally a shallow structure of sticks, gradually attains a height of several feet. In the absence of buildings, trees or rocks are, however, adopted for nesting. The eggs, usually from three to five in number, are pure white. During the

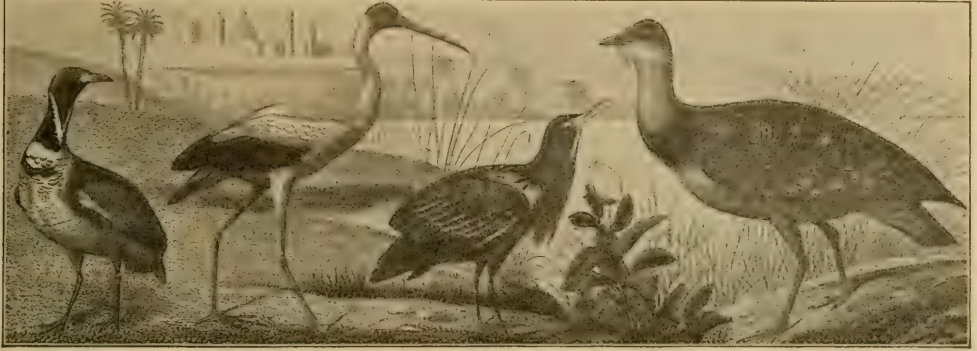
breeding-season the birds keep up a constant clapping noise with their beaks, and this noise not unfrequently betrays their whereabouts when soaring at such a height as to be quite invisible to the naked eye. As an instance of the constancy displayed by storks, it is stated that for three years a female, which remained during the winter in Europe, was visited annually by her mate, when both nested as usual. In the fourth year, however, the male bird also remained with his partner during the winter, and this continued for three years. Eventually both birds were shot, when it was discovered that the female had been prevented from migrating by an old wound.

The Purple Heron—A straggler to Britain, the purple heron is common in Holland and Spain, and ranges over the greater part of Europe to the southward of Central Germany. To the eastward it ranges from the Mediterranean to the Indian region, the north of China, and the Philippines, in such districts as are suitable to its habits, but only breeds in the warmer regions. Common and resident in Egypt, it appears to be mainly a winter visitor to most other parts of Africa, although it is a permanent inhabitant of certain marshy districts. The purple heron has a slender neck, and the crown and back of the head, together with the plumes, are purplish black; the cheeks and sides of the neck are fawn-color with streaks of bluish black; the back and wing-coverts are slaty gray; the long feathers on the back chestnut, the chin pale, and the neck reddish buff.

Snowy Heron—Together with the smaller herons, this bird is also known as the egret. The male bird, which measures about twenty-five inches in length, during spring and summer has the whole plumage pure white, with a crest of two long, narrow feathers, some long plumes on the lower part of the front of the neck, and the filament-like feathers of the back greatly developed. The winter dress lacks the crest and the plumes on the back. In Southern and Southeastern Europe the snowy heron is common, and it ranges through Asia Minor and Persia to India, China and Japan; while it occurs throughout Africa, and has been obtained from Northern Australia. The snowy heron nests in bushes and trees in the neighborhood of swamps, in company with the other waders; the nest being a platform-like structure of sticks intermingled with a few reeds, upon which are laid from three to six bluish green eggs. The bird differs from the white heron in being generally very noisy.

Avocet—This bird is closely related to the stilt. Its extremely long bill is curved upward at the end. The avocets are found in the same localities as the stilts, with the exception that none breed in India or the adjacent coun-

tries. The male of the common avocet is characterized by the black upper surface of the head and hinder part of the neck, and the white innermost secondaries; the young birds in their first plumage have the dark parts of the plumage brown, and the secondaries barred with white. The total length of the bird is eighteen inches. Owing to drainage, the European breeding-places of the avocet are now restricted to certain islands off Den-



SMALLER BUSTARD.

WHITE IBIS.

EUROPEAN BITTERN.

GREAT BUSTARD.



HORNED SCREAMER.

DESERT GROUSE.

CASSOWARY.

mark and Holland, the marshes of Southern Spain, the delta of the Rhone, and the lagoons of the Black Sea; but to the eastwards it nests in Palestine, Persia, Turkestan, the southwest of Siberia, and also in Africa. In winter these birds resort to India, China, and, more rarely, Japan; and they reach their European breeding-places in April and May, and depart in September. The North American avocet, ranging from the Great Slave Lake to Texas,

differs at all seasons by its white secondaries, and in the breeding-plumage by the pale chestnut hue of the head and neck. The habits of the avocets are similar to those of stilts.

Plover—The plover is a bird of powerful and sustained flight, flying when in flocks in a more or less wedge-shaped formation, and wheeling in the air, especially before pitching on the ground, in a peculiarly graceful manner. On the ground it is also equally active, running and walking with speed, and frequently wading breast-deep in the shallows. Breeding locally in Britain and some other districts of Northwestern Europe, this species has its chief nesting-haunts on the fjelds of Norway and the Russian and Siberian tundras; while in winter it frequents the shores of the Mediterranean, whence it wanders as far south as the Cape. It feeds largely by night. The nest is formed of dry herbage, with scraps of heath and moss, and situated either in a hole in the ground, on a tuft of herbage, under the shelter of a bunch of cotton-grass, or, more rarely, among short grass or heath. The eggs are very like those of the lapwing, from which they may be distinguished by their superior size, the absence of olive in their markings, and their brighter color. The parent birds are adepts in the art of inveigling away the intruder from the neighborhood of their eggs or young, the latter scattering themselves in all directions at the first alarm, to seek protection by skulking among the surrounding herbage.

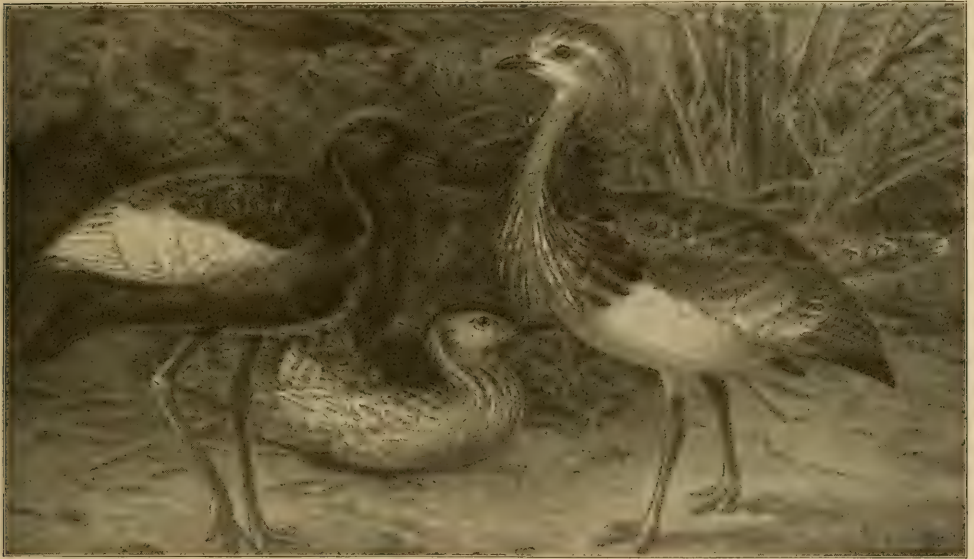
Crested Penguin—The common name for this bird is rock-hopper. It measures twenty-seven inches and is distinguished from the other members of the family by a yellow crest of from three to five inches. It is found in the greatest numbers on the Falkland Islands.

Sea Swallow—Properly speaking the sea swallow is a true tern, with the crown of the head black and the under parts white or gray.

Black Cormorant—There are thirty varieties of this family, all having long, powerful bodies, long necks and long beaks. The face and throat are naked, the legs short and stout and the feet webbed. The best-known member of the family is the black cormorant, which ranges over all of Europe, part of eastern North America, northern Africa and Egypt and a portion of Asia. The plumage of the head and part of the neck is black, in which are intermingled a number of hair-like white feathers. The under-parts, except the white patch on the thigh, are bluish-black. In China and Japan cormorants have been trained to fish for their masters. When fishing, cormorants often swim with their heads below the water. They feed almost exclusively on

fish. The nests are large platforms of sticks, and the eggs, never more than seven, have a pale blue shell, incrustated with chalky matter.

Frigate Pelican—The frigate bird differs from the other pelicans in its powerful hook-beak, slender body and absence of pouch. It lives entirely in the water, spending much of its time on the wing far away from land. It obtains a great deal of its food by taking it away from other sea birds. The plumage of the male is brownish black, shot with metallic green and purple on the head, neck, back, breasts and sides, shaded with gray on the wings. The beak is light blue at the base, white in the middle, and dark corn color at the tip. An air sack on the throat is orange red. The feet are carmine



BUSTARDS.

red above and orange beneath. The frigate bird inhabits the warm regions of the Indian, Atlantic and Pacific oceans and is sometimes known by the title of Son-of-the-sun. The female lays but a single egg.

Tropic Bird—Sailors generally refer to this bird as the “boatswain.” In appearance it is not unlike the tern and is somewhat smaller than the common gull. The best known member of the family is the red beak tropic bird which ranges over the tropical regions of the three great oceans. The plumage is white, with a reddish tinge, and black, and the two long tail-feathers white. The beak is coral-red, the eye brown, the leg yellow, and the

web and toes black. In younger birds the feathers of the back have black bands at the tips.

Mandarin Duck—This bird of brilliant color and long, silky crest is a native of China. Its plumage contains nearly all the colors of the rainbow and could only be described accurately at great length. The beak is shorter than the head, with its base turned upward and backward in an angle nearly to each eye.

Herring Gull—This is a British species, measuring upwards of twenty-three inches in length. In its summer plumage the head is white, the mantle pale pearl-gray, and the beak yellow; there is a yellow ring around the eyes, and the legs are flesh-colored. Herring gulls are found in northern Europe, North America, and the islands of the Atlantic. These gulls are in the habit of following the shoals of the fish from which they take their name, and may often be seen hovering above the fry, preparatory to taking a plunge among them in the water. Their chief food consists, however, of various marine animals thrown up by the tide; although during the spring and after rough weather they frequently wander far inland.

Common Gannet—The common name of this goose-like bird is booby. It differs from the darter in its shorter body, shorter and thicker neck and beak. The common or white gannet measures about thirty-four inches in length, and is entirely white, with the exception of black wing primaries and buff head and neck. The front of the leg and foot is green, the remainder nearly black. It is found in great swarms in the northern part of both hemispheres. It feeds exclusively on fish, upon which it darts from a great height. The cliffs and rocks where it nests frequently contain thousands of these birds.

Snake Bird—The name of darter is often applied to this bird. It differs from the cormorant in its much longer body, extremely long and thick neck, small, flat, narrow head, straight beak, with a point as sharp as a dagger, and its legs placed far back on the body. Its plumage is black, with a metallic green luster, with white streaks on the wing coverts. It frequents the banks of rivers, lakes and swamps in immense flocks. It feeds exclusively on fish, which it catches at night, spearing them with its pointed beak. When swimming only its head and neck are exposed, when it is easily mistaken for a snake, hence its name. Unlike many water birds, it builds in trees. The eggs, three or four in number, have light green shells with a chalky coating. There are four varieties of snake birds, one in Africa, one in India, one in South America, and the fourth in Australia.

Patagonian Penguin—A peculiarity of the penguin is the upright position in which it walks on land. It is one of the web-footed birds and in some respects is the strangest of all the feathered tribes. One of the peculiar habits of the penguins is to range themselves in long lines on the ledges of rocks or ice, simulating the appearance of soldiers when seen from a dis-



SEA EAGLE.

BLACK BUZZARD.

GOSHAWK.



KING VULTURE

EUROPEAN BUZZARD HAWK.

CONDOR.

tance. They are found in the Antarctic Circle, South Africa, South America, Australia and New Zealand. The color of the head, neck and throat is brownish-black, the upper parts are iron gray, and the under surface glistening white, faintly tinged with yellow.

Puffin—The most grotesque of all birds are the puffins, or sea-parrots, as they are sometimes called. Their great orange-red beaks, with bands of slaty-gray and yellow, seem out of all proportion to their heads. The Arctic puffin is the best-known member of the family. It is about the size of a teal. In plumage it resembles the guilemot, with the sides of the head white and the throat encircled by dark red. The puffin is a deep-sea bird and is both an expert swimmer and diver. Its single egg is laid either in a burrow in the ground or among the deep clefts of rocks. The egg is dull white, faintly spotted with gray and brown.

Razor-Billed Auk—This bird differs from the other members of its family by its smaller size, well-developed wings and shorter beak. Its length is about seventeen inches. It has no large white spot in front of the eye like the great auk, but in summer it has a narrow white line extending from the beak to the eye. In its summer dress, the chin and throat are brown, the head, high neck and upper parts black, with the under parts white; in its winter dress, the white extends upward to the throat, chin and sides of the head and the plumage of the upper parts is browner. The razor-bill is found on the coast and islands of both sides of the North Atlantic. It deposits its eggs on high ledges of rocks, preferring to deposit them in a crevice.

Little Bustard—This bird is much smaller in size than the great bustard and the male lacks the mustache found in the other species. In length it measures only seventeen inches. In summer the upper plumage is buffish-brown mixed with black, and two black and two white gorgets on the lower neck and breast. It is found in some localities in Europe and Central Asia, ranging into India and Northern Africa. It migrates in flocks of millions to and from its winter and summer homes.

In many of their habits they resemble the great bustards. Their flight is very different, and they often rise to a great height, and will flutter and twist about in the air. At other times, however, they fly rapidly and straight; and when on the wing always call continually. Wary in the cool of the morning and evening, during the heat of the day they lie close in the mustard-fields, which are their favorite haunts in the Punjab. They rise suddenly with a great pat-pat of the wings; and, though quite invisible till they rise, startle one with the great breadth of pure white they suddenly reveal, the whole of the secondaries and much of the primaries being white.

Common Bittern—The "boom" of the bittern is a familiar sound in the vicinity of swamps and marshes. Where these have been drained the bird

has almost disappeared. The male bittern is from twenty-eight to thirty inches in length. The plumage of the body is a buffish yellow, marked with reddish-brown; the head is brown, with a tinge of bronze-green; the beak is greenish-yellow; the legs and feet green. The common bittern is found all



SPARROW HAWK.

KESTREL.



GOLDEN EAGLE.

EUROPEAN OSPREY.

HOBBY FALCON.

over Europe, in Asia, and ranging eastwards through Central Asia to China and Japan. It also occurs in Persia and northern and central India, as well as in Burma; and likewise ranges over the whole of Africa and the greater part of North America. The bittern is essentially a bird of the swamps, among the

reeds and bulrushes of which it either skulks in a rail-like manner or stands erect, when it presents a strange resemblance to a pointed stump. When disturbed in the day among a bed of reeds it generally rises within easy shot, and after flapping lazily along for a short distance once more takes to covert. While on the wing it utters a resounding cry, replaced during the breeding-season by the hollow boom, from which the bird derives its name; and in its evening flights the bittern is said to soar in circles to vast heights. The nest, which is formed of a mass of reeds and flags, is placed either in thick covert, or on the marge of a swamp. The four eggs are olive-brown in color, but may be tinged with green when fresh laid. Among our ancestors the bittern was regarded as a favorite dish. Instead of booming, the American species during the breeding-season utters a cry which has been compared to the sound produced by hitting a stake with a mallet. Dr. Coues observes that "when the bittern is disturbed at his meditation he gives a vigorous spring, croaks at the moment in a manner highly suggestive of his displeasure, and flies off as fast as he can, though in rather a loose, lumbering way. For some distance he flaps heavily with dangling legs and outstretched neck; but when settled on his course he proceeds more smoothly, with regular, measured wing-beats, the head drawn in closely and the legs stretched out behind together like a rudder. He is very easily shot on the wing, dropping at a touch of even fine shot. When winged, he croaks painfully as he drops, and no sooner does he touch the ground than he gathers himself in defensive attitude to resent aggression as best he can. He fights well and with more spirit and determination than he might be expected to show. He has a very ugly way of pointing his resistance with quick thrusts of his spear-like bill, capable of inflicting no slight wound on an incautious hand. The food of this bird consists of various kinds of small aquatic animals. In its stomach may be found molluscs, crayfish, frogs, lizards, small snakes and fishes, as well as insects. Such prey is captured by spearing as the bird walks or wades stealthily along."

Great Bustard—This bird bears a slight resemblance to the wild turkey. It is now found in Central and Southern Europe, Palestine, Turkestan, Southern Siberia and Manchuria. It is rare in Northwestern Africa.

The male of the great bustard stands between three and four feet in height, and has a total length of forty-five inches, whereas the female measures about nine inches less. The male has a tuft of white bristle-like hairs, passing backwards and downwards from each side of the chin, and partially covering a narrow patch of bare skin. In the same sex the color of the head

is gray; the upper-parts are chestnut-buff, with black barrings; the primary quills blackish brown, but the rest of the wings white; the breast is marked with bands of chestnut and gray; the abdomen is white; and the tail-feathers are reddish, barred with black, and tipped with white. The female, as a rule, lacks the mustache, and the bands on the breast. Like many other members



MERLIN.

GRIFFIN VULTURE.

KITE.

WANDERING FALCON.

EUROPEAN
LONG-EARED OWL.

GREAT HORNED OWL.

SHORT-EARED OWL.

BARN OWL.

of the family, the male has an air-pouch opening beneath the tongue, and running some distance down the front of the neck, which is most developed during the breeding-season, but at other times probably becomes so contracted as to become almost unnoticeable. Always unknown in Ireland, and

having disappeared at an earlier epoch from Scotland, the bustard was probably exterminated as a resident English species in or about the year 1838; and it is now known only as a rare and casual visitor to the southern counties. Haunting the great steppes and plains—whether barren or under corn cultivation—of Europe and Asia, the bustard is a shy and wary bird, associating during the winter in large flocks, but breaking up into pairs in the breeding-season, although even then several such pairs may frequent the same neighborhood, and the immature individuals still remain in companies. Its food consists mainly of grain and the young shoots of cereals and other plants, but it will also consume insects, as well as small reptiles and mammals. Drinking appears to be quite unnecessary to these birds and their kin.

Generally silent, the female when alarmed gives vent to a kind of hiss, as does her partner; but the male has also a call-note which has been compared to the syllable "prunt." The breeding-season commences in May, towards the latter part of which the two, or occasionally three eggs are laid in a hollow in the ground, which may be situated in the open plain, or in a corn-field, and may or may not have a scanty lining of dry grass. In color, the eggs vary from pale buff to some shade of greenish or brownish olive, speckled with reddish brown or gray. During the breeding season the males, which sometimes desert their consorts, are apt to be very pugnacious, instances having been known where they have actually attacked human beings. Bustards when flushed generally fly two miles or more, sometimes at least a hundred yards high. They never try to run.

Horned Screamer—Screamers are birds of the size of a swan, but of totally different appearance, having a hen-like beak, a waxy growth at the base of the neck, large crop and a pair of powerful spurs on the front of each wing. The horned screamer of Guiana and Amazonia is easily recognized by the presence of a slender horn-like growth 5 or 6 inches in length, rising from the middle of the head, and curving upwards and forwards. Of the two spurs on the wing, the foremost is by far the longer and more powerful. In color, the soft feathers on the top of the head are whitish gray, with blackish tips; those of the cheeks, throat, upper neck, wings, and tail are dark brown; the wing-coverts having a greenish metallic sheen, while the feathers of the lower neck and upper breast are silver-gray, broadly banded with black, and those of the abdomen pure white. Screamers are found only in and around lagoons.

Cassowary—The cassowary shown in the illustration is confined to the Island of Ceram, and was the first species of this extraordinary bird made

known to science. There are now nine species known, the others inhabiting Australia, New Guinea and the nearby islands. They are about the size of ostriches. The top of the bare head projects upward into a helmet-like shape and the bare neck is ornamented with wattles. By reason of the brilliant



GODWIT.

EUROPEAN SNIPE.

EUROPEAN LAPWING.



DUSKY RAIL.

CRESTED IBIS.

CORN CRAKE. COMMON
PRANTICOLE. TURNSTONE.EUROPEAN STILT.
RUFIOUS SANDPIPER.

hues of blue, green and red on the head and neck, and the glossy sheen of the blue-black plumage, cassowaries are the handsomest of all the flightless birds. The body feathers are of a peculiarly loose and coarse structure, and appear more like hairs than the plumage of an ordinary bird; while the

wing feathers are represented merely by some four or five black quills devoid of barbs, which thus presents the appearance of very coarse bristles. In habits the cassowary differs from ostriches and rheas in being a forest-haunting bird. The eggs are dark green, the shell beautifully granulated or shagreened.

Kestrel—The small falcon which bears this name is also known as the windhover which it derives from its habit of hanging suspended in mid-air with its wings in rapid motion. When in this position it spies a mouse or small bird below, and drops upon it suddenly and noiselessly with unerring aim. The male kestrel, which attains a length of twelve and a half inches, has yellow limbs, bluish beak, and black claws. The crown of the head, nape, and cheeks are ashy gray with dark streaks; the upper parts reddish fawn, with a small black spot on each feather; the quills blackish gray with lighter margins; and the tail feathers ashy gray, with a single broad black band near the end, and the extreme tips white. Beneath, the general color is pale rufous fawn, with dark spots or streaks, both of which disappear on the thighs and under tail-coverts; while the tail is grayish white with indistinct bars. The female, which scarcely exceeds her consort in size, differs by the top of the head being reddish fawn with dark streaks, the upper parts being banded with bluish black, and the tail rufous with several incomplete black bars. The young males are nearly like the females, the tail changing blue first and the head last. The kestrel ranges over the whole of Europe and Northern Asia, migrating in winter into the north of China, India, and Northeastern Africa. It is replaced in the New World by the so-called American sparrow-hawk, in which the center of the crown of the head of the male is rufous, and the wing-coverts blue with black spots. Although its chief food consists of mice and voles, the kestrel occasionally kills small birds, and will also eat frogs, beetles, worms and grubs, while in India it frequently devours lizards. That it will occasionally kill a young partridge or chicken is doubtless true, but such small robberies are far more than counterbalanced by the benefits it confers on the agriculturist by the destruction of hosts of pernicious rodents, and it ought therefore to be carefully preserved, instead of being ruthlessly shot down. Although occasionally placed in a hollow tree, the nest is more generally situated among rocks or old buildings, while still more frequently the deserted nest of some other bird, such as a crow, magpie, or raven, is taken advantage of. The eggs, usually four or five, may be either mottled all over with brownish red

or orange, or blotched with these colors upon a light ground. They are generally hatched late in April, or early in the following month.

Osprey—This bird is the connecting link between the owl and the eagle, and is commonly known as the fish hawk. The upper plumage is dark brown and the under plumage white. It is found in almost every part of the world except Oceania. It feeds on fish which it catches both in salt



HOOPES.

and fresh water. It makes a large nest of sticks, either on the ground or on a cliff.

Merlin—This small falcon has a resemblance to the American pigeon hawk, the upper plumage being bluish gray, the forehead and sides of the face whitish, and the under parts of the same color. The male measures about ten inches and the female two inches more. It inhabits Europe and Northern Asia, extending into India and China. In Great Britain the

merlin usually nests on the ground. Its eggs, four to six in number, are brick-red, mottled with a darker shade. Merlins may be trained to hunt other birds and are equal to the task of catching a pigeon.

Kite—Few birds are better known in Europe than the common red kite. The general color of its plumage is reddish, while in the old males the head and throat are reddish with brown streaks.

Wandering Falcon—The name is derived from the habits of the young which rarely remain long in one place. The marks of the wandering falcon are a blackish crown on the head, black patches on the cheeks, back and tail a bluish gray, breast reddish white, the beak blue and black at the tip. It is found all over Europe, Northern Africa, Siberia, China, Japan and the Malay Islands. The North American variety is known as the duck-hawk.

Long-Eared Owl—By reason of its beautifully mottled plumage, of which the general color is blackish brown varied with orange buff, this owl is one of the handsomest of the common species. It is smaller than the short-eared owl, being but thirteen and a half inches in length. Its habits are similar to the short-eared.

Short-Eared Owl—Australia and Oceania are the only countries where the short-eared owl is unknown. Its ear tufts are short and the general color of its plumage tawny; each feather is streaked with brown down the middle; the under parts are pale buff, streaked with blackish brown. In length it varies from fourteen to fifteen inches. Its cry resembles the words keaw-keaw. It feeds on mice, small birds and beetles. In the United States the home of this owl is in the long grasses or weeds along the borders of lakes.

European Barn Owl—Except in New Zealand and parts of Persia, Japan, and China this bird is found in all parts of the world. Its length is about fourteen inches. Its prevailing color is buff, mottled with black and white. The discs on the face around the eyes are white. Its usual cry is a kind of scream. Its food is chiefly small mice. Its days are spent in the dark parts of buildings or the hollows of trees, and its nights in pursuit of food.

Godwit—The godwits are allied to the sandpipers but the feathers of the forehead are not extended. They breed in the temperate northern regions of the northern hemisphere, but migrate far to the south in winter. The best-known is the bar-tailed godwit, which measures fifteen or sixteen inches in length. In the summer dress, the upper-tail coverts and tail are white with dark-brown bars, the lower back, rump and under-wing coverts being white

with brown markings. In the American bar-tailed godwit the under-wing coverts are chestnut.

Snipe—The plumage of the common snipe is a mottled russet or ashy



RUBY TOPAZ.
MAGNIFICENT HUMMING BIRD.

BIRD OF PARADISE.
COMMON HUMMING BIRD

DE LANDE'S HUMMING BIRD.



OSTRICHES.

INDIAN JACANA.

AFRICAN CROWNED CRANE.

hue which harmonizes with the bird's surroundings. The common snipe is about ten and one-half inches in length. It is found in Europe, parts of Asia and North America, preferring marshy and swampy places. It is a

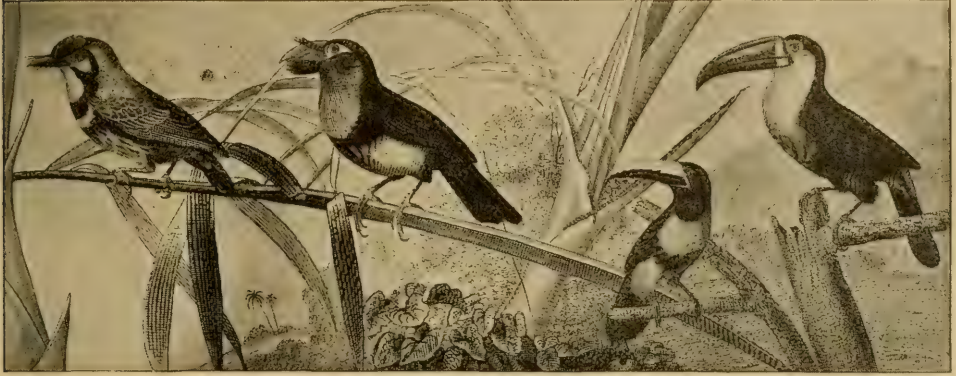
choice game bird and is persistently hunted. Like the partridge it is addicted to "drumming." Its nest is a hollow, lined with dried grass, and the four eggs are buff or olive in color, with large blotches of rich, dark brown.

Lapwing—Closely related to the plover is the bird commonly called lapwing or green plover, the head of which often bears a crest. Unlike other members of the family the common lapwing has no spur on the wing, and is recognized by the metallic luster on the green plumage of the upper parts, the absence of white on the wing coverts, and by its crest of great length. It ranges from Britain to Japan and is found on both sides of the American continent, and in Alaska and Greenland. In winter it goes as far south as Northern Africa, Persia and India. In their enormous winter flocks, lapwings are among the most difficult of birds to approach. When the breeding-place is approached, the old bird glides steadily off the nest, runs a little distance, then rises in the air to flutter restlessly above the intruder's head, uttering its harsh, wailing cries. So closely do the eggs resemble surrounding objects in color that it is no easy task to find them; but the old birds very often betray their whereabouts by hovering above them; at these times the birds are easily approached, often coming within a few feet. When the young are hatched, they soon follow their parents in search of food. If menaced by danger, the old birds quit their offspring at once, fly into the air, or reel and tumble along the ground as if wounded, while the nestlings scurry off in different directions and hide themselves among the herbage.

Corncrake—The corncrake or land-rail is found throughout the greater part of Europe and as far east as the Yenisei in Siberia, ranging south in winter to Africa, while it is also an occasional visitant to North America and Greenland. Nearly allied is the Carolina rail, in which the general color above is olive brown, varied with black centers and white margins to the feathers; forehead, crown, front of the face and middle of the throat and neck black; the eyebrow-stripes, sides of the face and neck, as well as the chest, ashy gray, the breast white, and the flanks barred with black and white.

Pratincoles—The forked tail and somewhat swallow-like appearance and habits of the pratincole render it, at first sight, somewhat difficult to believe that these birds are near relatives of the plovers; but closer observation will show that their long legs are adapted for running in the usual plover-like manner, and that it is only when on the wing hawking for flies that a resemblance is presented to the swallows. Many of them resemble coursers in their black under wing-coverts and white upper tail-coverts. Like the

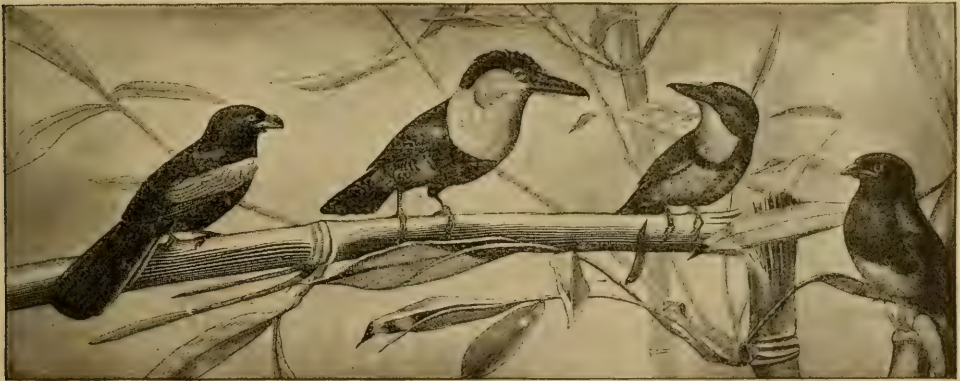
courers, the pratincoles feed almost exclusively on insects. They frequent sandy plains or marshes, and the banks of rivers and lakes, as well as lagoons. At all times of the year they associate in flocks, although each male selects but a single partner. The common pratincole is a small bird measuring



GREEN AND ORANGE BARBET.

GROOVE-BILLED
BARBET.

LONG TAILED ARACARI.

LONG-BILLED
TOUCAN.

CURUCUI.

PUFF-BIRD.

SOUTH AMERICAN.
PUFF-BIRD.

GREEN CURUCUI.

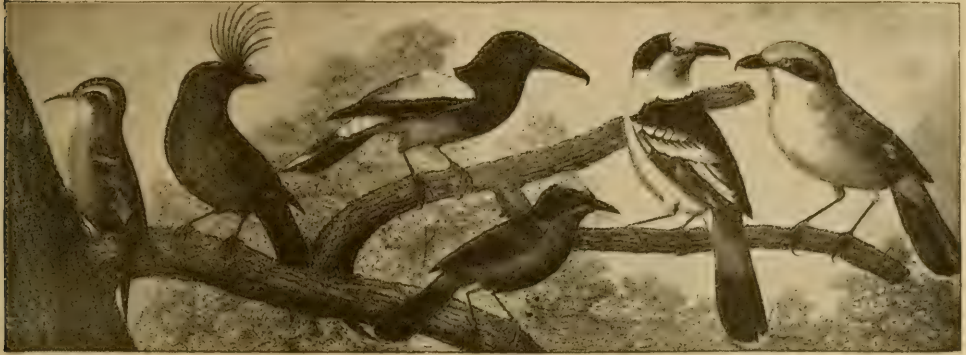
from 9 to 10 inches in length, and inhabiting the warmer parts of Europe, Asia, and Africa; an occasional straggler rarely reaching the British Islands. In color most of the upper parts are clove-brown; the primaries nearly black; the upper tail-coverts white; the feathers of the deeply-forked tail

white at the base, and elsewhere brownish black; the chin white; the throat pale buff, bordered by a black line ascending to the eye; the breast brownish buff; the under parts and thighs buffish white, and the under wing-coverts chestnut. These birds do not make any nest, but lay their two or three eggs on the bare ground, in most cases without even taking the trouble of scratching a hollow for their reception. The eggs are nearly oval, and extremely fragile; their ground-color varying from yellow to slaty gray, upon which are numerous streaks and blotches of dark blackish brown. Like many other members of the order, pratincoles endeavor to draw intruders away from their nests by simulating lameness or some other injury.

Turn-stone—The turn-stone bears a strong resemblance to the plover, but is classed with the snipes. They are three species, all of which breed in the Arctic regions and migrate south in winter. The plumage of the common turn-stone is mottled, black, white and chestnut, with a pure white chin and throat. The total length of this bird is nine and a half inches. It takes its name from its habit of overturning pebbles and other stones with its beak for the purpose of obtaining food. Although generally running along the shore, and taking short flights when disturbed, it is not destitute of the power of swimming; and its cry is a clear loud whistle. The nest is but a poor affair, consisting of a sparsely lined hollow in the sand; and the four spotted eggs differ in color from those of the plovers, and resemble those of the sandpipers and snipe.

Stilt—The stilt, or stilt plover, gets its name from its extremely long and slender legs. The European stilt has a perfectly white head and neck. The upper parts and wings are black, the back is glossed with green, the upper tail-coverts and tail are pearly gray; the rest of the plumage pure white; the beak, black; the legs and feet, crimson. Stilts are essentially marsh-birds, although they always keep to open water, in which they may be seen standing up to their knees on the lookout for insects, molluscs, tadpoles, etc.; their most favorite resorts being lagoons, where the water is brackish. They are generally found in small parties, and whether on land, in the water, or in the air, are remarkable for their graceful appearance. They walk with a deliberate step, which may be quickened into a run; and they fly straight but slowly, with the neck outstretched and the long legs extended beyond the tail. Ordinarily silent and far from shy, in the breeding-season these birds utter a cry resembling the syllables, "kit, kot, kit," and are most assiduous in endeavoring to lure the intruder away from the vicinity of their nests.

In India stilts breed in enormous numbers, laying most of their eggs in June, although in Spain they are at least a month earlier; one of the favorite



BROWN
CREEPER.

FORK-TAILED
DRONGO.

BLACK AND WHITE SHRIKE.
BARBAKY SHRIKE.

HOOK-BILLED
SHRIKE.

BUTCHER BIRD.



EUROPEAN GREEN
WOODPECKER.

MILITARY MACAW.

AUSTRALIAN
GREEN PARROT

BLUE AND YELLOW
MACAW.

EUROPEAN
WOODPECKER.

haunts being some salt-works near Delhi, where the brine is distributed in shallow pools over acres of ground. The nest varies according to the nature

of the locality, being more bulky in moist places, and sometimes even floating on the water. The four eggs are pear-shaped, and of a buffish brown ground-color, upon which are blackish-brown streaks and blotches, with underlying markings of gray.

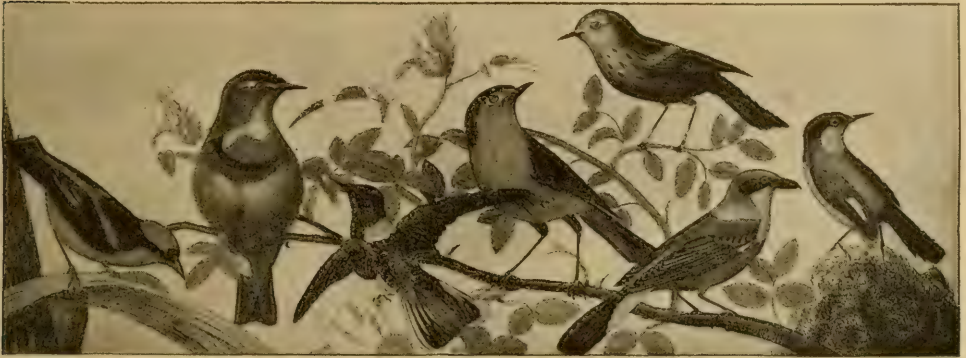
Sandpiper—This bird gets its name from its shrill, piping cry, and the further fact that it is found along the seashore except in the breeding-season, when it frequents moors and marshes. Its beak is straight and slender and it is further distinguished by the feathers of the forehead being considerably extended. The sandpiper's scanty nest is placed on the ground, and, at the proper season, contains four pear-shaped spotted eggs. The best known forms of the common sandpiper are the green sand-piper, the red shank, the green shank and the ruff. The males of the last named have a large ruff around the neck and are very combative in disposition. In length the male measures about twelve inches and the female some two inches less. Formerly common in the English marshes, the ruff is now mainly a passing visitor to Britain, its breeding-haunts ranging from the most northern lands of Europe and Asia as far south as the valley of the Danube and the Kirghiz Steppes; while in winter it wanders as far as the Cape, northern India, Burma, and even more remote regions.

Ruby Topaz Humming Bird—This species is confined to South America, and is sometimes known as the King humming bird. It is distinguished by the brilliant ruby color in the head and neck.

Magnificent Humming Bird—The crested head and little spangled frills on each side of the neck make this bird conspicuous even among its brilliantly colored fellows. The upper plumage is a glittering golden green, with a buffish band across the rump; the crest is long and of a dark cinnamon color; the throat is glittering green, bordered with cinnamon, and the feathers of the neck are tipped with a round spot of green. The under parts are gray. Its flight is very rapid.

Great Bird of Paradise—The paradise birds are all supplied with gorgeous plumage. The great bird of paradise, found in Papua, the Aru and nearby islands, is the largest of the family, measuring from fifteen to eighteen inches. The body, wings and tail are of a rich coffee-brown, which deepens on the breast to a blackish violet or purple-brown. The whole of the top of the head and neck is of an exceedingly delicate straw-yellow, the feathers being short and close set, so as to resemble plush or velvet; the lower part of the throat up to the eye is clothed with scaly feathers of an emerald-green color, and with a rich metallic gloss, and velvety plumes of a still deeper green

extend in a broad band across the forehead and chin as far as the eye, which is bright yellow. The beak is pale lead-blue; and the feet, which are rather large, and very strongly and well formed, are of a pale ashy pink. The two middle feathers of the tail have no webs, except a very small one at the base



CREEPER.

BLUE-THROATED REDSTART.

ROBIN.

REDSTART.

REDSTART.

WHITE-NECKED HUMMING BIRD.

RED-BACKED SHRIKE.



CRESTED HUMMING BIRD.

COMMON JAY.

EUROPEAN KING PARADISE

SMALLEST HUMMING

EUROPEAN ROLLER.

NUT CRACKER.

BIRD.

BIRD

SUPERB PARADISE BIRD.

and at the extreme tip, forming wire-like cirrhi, which spread out in an elegant double curve, and vary from twenty-four to thirty inches in length. From each side of the body, beneath the wings, springs a dense tuft of long and delicate plumes, sometimes two feet in length, of the most intense

golden-orange color, and very glossy, but changing towards the tips into a pale brown. This tuft of plumes can be elevated and spread out at pleasure, so as almost to conceal the body of the bird. In the female the whole of the ornamental plumes are wanting, and the color is a uniform coffee-brown. At certain seasons of the year the males flock together in a selected tree for the purpose of display, forming what the natives term "dancing parties." On one of these trees, a dozen or twenty male birds assemble together, raise up their wings, stretch out their necks and elevate their exquisite plumes, keeping them in continual motion. When thus assembled the birds are shot with blunt-headed arrows by the natives, who climb silently into the play trees.

Common Humming Bird—The entire humming bird family is confined to America, ranging from the Arctic regions to the southern coast. As a rule the humming bird does not possess any song. Its brilliant metallic colors are well known for it is abundant in all parts of the country. The flight of the humming bird is unlike that of any other bird. When poised before any object, the motion of the wings is so rapid that the eye cannot follow it. It sometimes has the appearance of flying backward. Their little nests are made of moss, covered outside with lichens. The eggs, two in number, are white, and oval at both ends.

De Lande's Humming Bird—This beautiful specimen has all the brilliant colors of its fellows, and is distinguished by a long pointed crest and long baggy-like bill. It is confined to South America.

Jacana—The jacanas differ from all other birds in their extremely long toes. They are handsomely colored birds, black or black and white being the principal color of the plumage. They are confined to South America, southern Africa, the Indian region and Australia. They are long-legged, slenderly-built birds, with short tails, spurs on the wings and a naked shield on the forehead. They live upon insects and frequent lakes and quiet rivers, where their long toes enable them to walk over the leaves of the water-lilies. The nest is a rude structure built near the edge of the water. The eggs, which vary from four to six in number, have a bluish-green ground, with liver-colored spots.

Green and Orange Barbet—Burma and Southern China are the home of this bird of many colors, the prevailing tint being green, the mantle brown, the hind-neck streaked with orange, the head blue and the bill a pale yellow. The nest-holes are drilled into a tree like those of the woodpecker.

Brown Creeper—The creepers get their name from their method of pur-

suings their prey, comprising spiders and insects on the trunks of trees or the surface of cliffs. The brown creeper is the most familiar of the species. It is a small, plain-colored bird with a long downward curving beak and long curved claws. The tail consists of twelve stout pointed feathers, which are often stiffened to aid in climbing. The upper plumage is reddish brown,

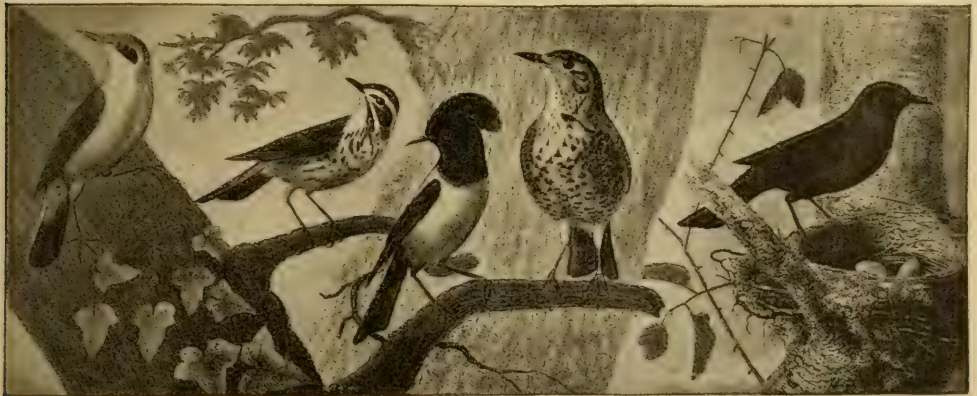


CAYENNE WOODPECKER.

LORY.

HAIRY WOODPECKER.

WRY NECK.



WILLOW WREN.

REDWING.

ROSE-COLORED
STARLING.

MISSEL THRUSH.

EUROPEAN.
BLACKBIRD.

the under parts white. It is found in the northern regions of both the eastern and western hemispheres.

Fork-Tailed Drongo—These birds, which inhabit southeastern Asia and Africa, are better known as king crows. Although their plumage is black, the deeply forked tail of ten feathers makes them easy to distinguish from

the crow family. They are the most familiar of Indian birds. The nest is composed of fine twigs and grass, covered on the outside with cobwebs. The eggs, usually four in number, are white or salmon colored, with brownish spots. The drongo is frequently seen perched on the backs of cattle searching for insects.

Military Macaw—The prevailing tint of this small bird is green; the forehead is scarlet, the lower part of the back, the rump and upper tail coverts are blue, the four middle feathers of the tail are brownish red, tipped with blue. This macaw is twenty-seven inches in length and ranges from Mexico to Peru.

Blue and Yellow Macaw—In this bird the upper plumage, wings and tail are blue, the under parts yellow, a black patch on the throat and a grass green crown on its head. It ranges all over tropical America. It nests in hollow trees and its eggs, usually two, are about the size of those of the hen. From the first streak of dawn until it seeks its nest at night the macaw keeps up a constant screaming, and the clamor of a large flock is almost deafening.

White-Necked Humming Bird—This bird is distinguished from all the members of its family by a broad band of white feathers on the back of the neck, a broad fan-like tail, edged with white.

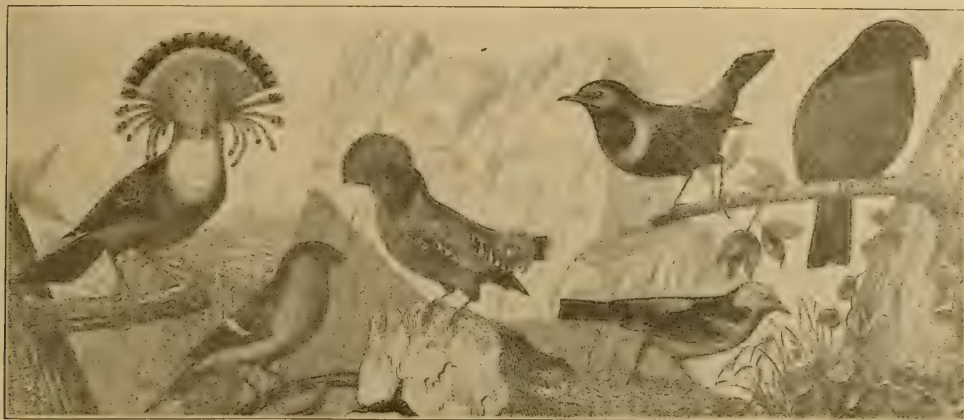
Crested Humming Bird—The crest of this bird is less pointed than in De Lande's humming bird; its color is metallic purple, shading off into golden and green. The sides of the head and throat are black. Its general color is a shining grass-green.

Jay—The jays are closely related to the crows. The beak is short and compressed, and the feathers on the crown of the head are long and capable of being erected. They make a harsh cry, and are given to scolding other birds, or any person that comes near their nest. The jay is the thief and vandal of the bird-world, and delights in destroying the nests and eggs of other birds and their feeble fledglings. On the ground, the jay proceeds by hopping instead of walking. There are many varieties of the family, the most familiar of which is the crested blue-jay of North America and Mexico. Some of the species are beautifully colored.

Nutcracker—The nutcrackers are well marked in form and color. They are of a chocolate-brown, more or less spotted with white. The European nutcracker shown in the illustration inhabits northern and central Europe, northern Asia, China and Japan. Its eggs are pale bluish-white, thickly spotted with olive-brown. One of its notes is a peculiar gurre, gurre, and

there is another like a sprung rattle. As its name indicates, it feeds principally upon nuts.

King Bird of Paradise—This beautiful little bird of New Guinea differs



SO. AM. GREAT-CRESTED
FLY CATCHER.

BULLFINCH.

COCK OF THE ROCK.

BANDED CHATTERER.
SEVEN-COLORED TANAGER.

THICK-BILLED
FINCH.



ORTOLAN.

GREY FLY CATCHER.
SCARLET-CRESTED CHATTERER.

WHITE-NECKED
FLY CATCHER.

GOLDFINCH.
SISKIN.

REED BUNTING.

from the other birds of paradise both in size and plumage. It measures only six and a half inches in length; its head, throat, upper parts, wings and tail are red. There is a large tuft of fan-like plumes on each side of the breast, purplish in color, and tipped with green. It wears a green gorget below the

red of the throat, and the rest of the under-parts is white. Its two central tail feathers are very long and racket-like.

Purple-Capped Lory—This member of the parrot family of the Molucca Islands is a gorgeous bird. Its general color is scarlet, the breast golden, wings green tipped with blue, tail red and a dark purple cap on the head. Like other lories it is a honey-sucker but sometimes eats soft fruits and figs. Its eggs, three to four, are laid on the bare wood. It is easily taught to speak and is a ventriloquist.

Rose-Colored Starling—This bird is an inhabitant of Europe, with its winter home in India. In the plumage of the male, the head, crest, wings and tail are black, with a blue or violet gloss; the back and breast are a beautiful rose color, which, in winter, is suffused with brown. The rose-colored starling is one of the most sociable and cheerful of birds. The song of the male is a continual chatter, mixed with harsh and disagreeable sounds; both one and the other begin in the early morning, continuing for a length of time, and renewed at intervals after feeding. The males, always at strife, may be seen pursuing one another and exchanging blows with their bills, while in the most curious attitudes and with their long black crests elevated and expanded. They exhibit great affection for the hen birds which, never leaving the nest during the period of incubation, are protected and fed by them.

Bullfinch—Bullfinches can be easily recognized by their large heads, short heavy beaks, white rumps, and deep black wings and tails. The plumage varies considerable from creamy-dun color to bluish gray. The male sometimes has a rosy breast with upper parts of snowy whiteness. The female's breast is chocolate-brown. The bullfinch inhabits the woods and thickets of northern Europe and Siberia. Its eggs are from four to six in number, greenish-blue in color, speckled and spotted with purplish-gray. The cock bullfinch is a fighter and is always ready to do battle with an intruder. Its natural song is feeble and contains little music.

Ortolan—The home of the ortolan is in southern Europe. The head of the male is gray, tinged with greenish yellow; the upper-parts are reddish brown, with black streaks; the eyelids are white, the foreneck and chest olive, and the under-parts reddish cinnamon. It nests on the ground, and its eggs are bluish white to pale salmon color, spotted and blotched with rich purple-brown. It is among the tamest of wild birds. It sings a monotonous song all day, and in Sweden it sings much at night. Ortolan are much esteemed by epicures, to whom its flesh is a great delicacy.

Goldfinch—One of the common birds of England is the goldfinch. It is

a resident also in Madeira, the Canaries, Africa, Syria, Asia Minor and Persia. In plumage, it greatly resembles the American siskin, or yellow bird.



CHAFFINCH.
AMADUVAT.

KING WIDOW-BIRD

RED-BILLED WIDOW-BIRD.
GREEN FINCH.

GARNET HUMMING BIRD.
SENEGAL FINCH. EUROPEAN
YELLOW-HAMMER.



SKYLARK.
CRESTED LARK.

LYRE BIRD.

TITMOUSE.

CRESTED TIT.
HEDGE WARBLER. FIELD LARK.

The eggs are four or five in number, greenish-white in color, spotted and streaked with purplish-brown and markings of violet-gray,

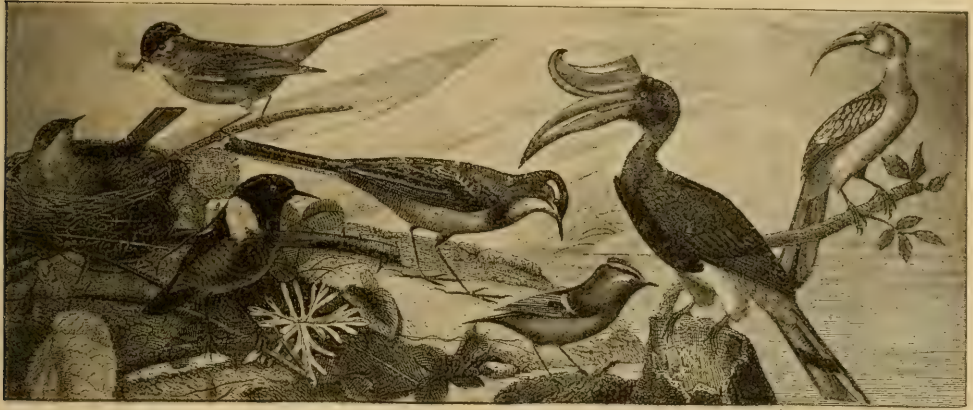
Common Siskin—The plumage of the male siskin is yellowish-green above, the rump bright yellow, the quills and back feathers blackish, edged with yellow, the chin is black, and the throat and breast bright yellow. It is found from Japan to the British Isles. Male birds are restless and lively, singing nearly all day. The nest is like that of a goldfinch. The American siskin is common in all parts of the United States and is generally known as the yellow bird. Its eggs are white, with a rosy blush when first laid.

Reed Bunting—The buntings are a species of finch. The reed bunting is found all over Europe where there are swamps. It nests among rushes and long grass. Its eggs are drab, streaked with black and dark purple. The general color of the male is reddish brown, with broad, black centers in the feathers of the back. The tail feathers are dark brown, the two outer ones edged with white; the crown of the head and sides of the face are entirely black; there is a broad band of white back of the neck; the throat is black; the under-parts white, streaked with black on the sides. There are rare specimens entirely white.

Chaffinch—The most familiar member of the finch family is the chaffinch, found in all parts of Europe. Its plumage varies. In summer the male is usually a chestnut brown, with white wing-coverts, or black tipped with white, a black forehead, slaty-blue crown, chin and breast a pale wine red, and the lower parts white. The female is ashy brown, washed with olive yellow, the wings spotted with white. Species have been found of pure yellow with a tiny patch of pink feathers on the breast. The chaffinch varies its nest according to its surroundings and some of them are of remarkable construction. A remarkable nest found in Denmark was decorated all over the outside with small pieces of newspaper. The eggs of the chaffinch are generally purplish gray in ground-color, washed with green, and blotched and spotted with dark red; but perfectly blue, unspotted eggs have been seen, although this variety is rare.

Greenfinch—The grosbeak group of finches is distinguished by short, stout beaks, and it is to this group that the greenfinch belongs. Green and yellow are the chief colors of its plumage. The male is olive yellow above, shaded with ashy gray; the under surface is yellow. The greenfinch is fond of building near the water and the young birds frequently tumble out of the nest and are drowned. The eggs are white, spotted with reddish brown and gray. The greenfinch inhabits Europe, northwestern Africa, Palestine, Turkestan, eastern Siberia, Japan and China. Like all the finch family it feeds principally on seeds.

Skylark—In England only the nightingale exceeds the skylark in the beauty of its liquid notes. The common skylark is one of the most abundant of all European birds and its favorite nesting place is in the British Isles. It

BLACK-CAPPED
WARBLERS.

WHEATEAR.

GRAY WAGTAIL.

GOLDEN-CRESTED
WREN.RHINOCEROS
HORNBILL.RED-BILLED
HORNBILL.

ARGUS PHEASANT.

BLUE-BACKED DOVE.

PEACOCK. INDIAN PIGEON.

ROCK PIGEON.

prefers the open country, and when disturbed rises to a great height, uttering its cheery carol. It ranges as far south as China and the plains of India. The soft marshes of the British coast are well adapted to the habits of the skylark,

and its nest is built in the side of a tussock of rough grass. Young skylarks can scarcely be distinguished from the dried grasses surrounding their nests. It is a singular fact that skylarks do not wash, but delight in cleansing their plumage by dusting their feathers in dry earth. The eggs of the skylark are white, thickly freckled with brown and gray. In the plumage the upper-parts are brown, tinged more or less with rufous, many of the feathers having dark centers; the wings are dark brown, the primaries narrowly edged with white on the outer webs; the tail is brown, with the exception of the outer feathers, which are nearly all white; the throat and breast are buff, streaked with brown, and the rest of the under surface creamy white. Both sexes are alike.

Crested Lark—A crest of very long feathers on the head distinguishes this lark from other members of the family. The song of the crested lark is sweeter and more pleasing than that of the skylark. This bird is found in all parts of Continental Europe, and frequents plowed fields in preference to grass land. Like the skylark, it nests upon the ground. Its eggs are grayish white, marked with brown and gray. In India the crested lark is frequently caged, and kept in darkness by its cage being wrapped in a cloth. In this state it learns to sing very sweetly, and even to imitate the songs of other birds. The crested lark has the upper-parts brown; the feathers of the neck and back having dark centers fringed with buff; the crest is conspicuous, and consists of nine or ten narrow feathers, blackish brown in color, edged with buff; the lower-parts are creamy white; while the sides of the throat are spotted with blackish brown; the feathers of the breast and flanks being streaked with dark brown.

Field Lark—A distinguishing feature of the field lark is a large patch of black adorning the sides of the neck. The upper parts of this bird are grayish brown, the feathers having dark centers; the under surface of the body is white, streaked finely with dark brown. In general appearance it somewhat resembles the corn bunting. It is one of the finest of songsters, and it would be difficult to overpraise the beauty of its glorious song, which is full of changes. It is a heavily-built bird, but does not dangle its legs in the air when flying. Its permanent home is in southern Europe. It makes its nest in a hole in the ground, sometimes as deep as three or four inches. The eggs are a dull gray, blotched with brown and amber. The field lark is much in demand for eating.

Gray Wagtail—The favorite haunts of this bird are the streams and mountain torrents of central Europe. It delights in tiny cascades and rippling waterfalls, wading daintily in the shallows of a stream and running over the

rocks rising out of the bed. In the summer plumage of the wagtail, the crown and upper parts are slaty-gray, the upper tail coverts greenish-yellow, a white stripe passing above the eye; chin and throat are black and the lower parts bright yellow. In winter, the chin and throat are dirty white; the



NIGHTINGALE.

PINE TIT.

EUROPEAN KINGFISHER.

EUROPEAN SWALLOW.

ALPINE MARTIN.



REDSTART.

LONG-TAILED

JAVA

COMMON PEWEE.

BLACK-CAPPED

GOAT-SUCKER.

PEWEE. KINGFISHER.

KINGFISHER.

GARDEN WARBLER.

breast dull buff; the under parts grayish yellow. The gray wagtail nests year after year in the same place. The eggs are usually six in number, white in color, suffused with pale brown or olive. This bird has a pretty little song.

Rhinoceros Hornbill—The common rhinoceros hornbill is found in the

Malay Peninsula, the Islands of Sumatra and Borneo. It is of large size, measuring nearly four feet in length. The color is black, with a slight gloss of steel-blue or dark green; the rump and upper tail-coverts being white, as is also the tail, which has a broad bar of black just before the tip; while the under surface of the body is black, with the exception of the lower abdomen, thighs, and under tail-coverts. The bill has a large casque, with the fore-part turned up into a horn-like protuberance, whence the bird's name of rhinoceros. The color of the bill is whitish yellow, black at the base, the casque lake-red, shading off below into orange near the base, which is black; and there is also a black line from the side of the nostrils to the fore-part of the casque. The feet are yellowish green, and the iris deep lake. The female resembles the male in color, but has no black base, and no black line along the side of the casque. In the young birds there is no fully-developed casque, but only a small orange-colored growth on the top of the upper bill. It will devour beetles, worms, mice, small birds, and almost any other kind of food.

Red-Billed Hornbill—From India to Siam the red-billed hornbill is met with. The casque or horn is not so well developed as in the rhinoceros hornbill and is orange red on top. The black wings are thickly marked with white. Like the other hornbills it nests in a great hole in a tree and feeds upon anything it can get.

Argus Pheasant—The argus pheasant is the largest of the pheasant family. The male bird has the naked skin of the sides of the head, throat and fore-part of the neck dark blue. The feathers on the crown and the short crest are black; the upper parts beautifully checkered, mottled or spotted with black and buff; the chest is barred with black, and the rest of the under-parts are black, with wavy bars of chestnut and buff. It is found in the forests of Siam, the Malay Peninsula and Sumatra. In total length the bird measures six feet from the bill to the end of the tail. The female has the general coloration of the male, but lacks the beautiful ornamental markings. These pheasants are quite solitary, every male having his own "drawing-room," of which he is excessively proud, and which he keeps scrupulously clean. They haunt exclusively the depths of the evergreen forests, and each male chooses some open level spot—sometimes down in a dark, gloomy ravine, entirely surrounded and shut in by dense cane-brakes and rank vegetation—sometimes on the top of a hill where the jungle is comparatively open—from which he clears all the dead leaves and weeds for a space of six or eight yards until nothing but the bare clean earth remains, and thereafter he keeps this

place scrupulously clean, removing carefully every dead leaf or twig that may happen to fall on it from the trees above. These cleared spaces are undoubtedly used as dancing-grounds, but personally I have never seen a bird dancing in them, but have always found the proprietor either seated quietly in, or moving backwards and forwards slowly about them, calling at short intervals, except in the morning and evening, when they roam about to feed and drink. The males are always to be found at home, and roost on some tree close by.

Common Kingfisher—The common kingfisher is a beautiful bird of a greenish blue color, with a band of white feathers on the sides of the neck, a buffy white throat and the under parts a rich orange red; the bill is black, the feet coral red. It is seven and a half inches in length. The three varieties are all crested. It is common all over Europe and Northwestern Asia. It is exclusively a water bird, feeding on fish. Seated under overhanging willows or on an exposed bough or stump, the kingfisher watches patiently for the approach of its prey, when it dives like a flash of lightning under the water. Sometimes it builds a nest, but quite as often lays its eggs in a tunnel in the bank, excavated by itself.

Java Kingfisher—The bill of the Java kingfisher resembles that of the stork and is coral red in color. The plumage is dull green with a shade of blue on the wings, the head chocolate brown, the under surface a pale ochre. It nests in holes in high sandy banks, and although fish forms its principal food, it relishes crabs and frogs. Of the stork-billed kingfishers eleven species are known, their range extending from the Indian Peninsula and Ceylon, through the Burmese and Malayan countries to Java, Sumatra, the Philippines, Borneo and Celebes.

Black-Capped Kingfisher—The marks by which this bird is best known are a black cap or crest on the head and a broad white collar on the back of the neck. The under surface of the body is white with a chest band of black and white feathers. It is a peculiar fact that in the Old World these birds are either black and white, or gray and white, while in America they are either gray or green. Like the Java kingfisher they have long bills and long tails, and live exclusively upon fish. Writing of a nest with young found in the Northwestern Himalaya, a naturalist states that "the entrance was a large hole, fully four inches in diameter, and at the end was a chamber fully ten inches across, in which were four young birds; in the chamber was a quantity of fish bones and some grass. The eggs are three or four in

number, and the birds are in the habit of carrying to their young fishes from six to seven inches in length, and these are always swallowed whole."

Rock Pigeon—The rock pigeon, or blue rock, as it is sometimes called, is found throughout Europe, and as far east as India. In the original wild stock of the blue rock the plumage is gray, the rump white, and the neck and upper breast metallic green and purple, while there are two narrower black bars across the wing and a broader one across the end of the tail. It is found in a wild state where caves and deep fissures exist, and is common along the northern coasts of Scotland and Ireland.

Goat-Sucker—This bird is even better known by its true name of night-jar. It has a broad beak set with strong bristles. The plumage is a dark ashy gray with markings of black and buff. The males have a large patch of white on the quills and at the end of the tail coverts. They are found nearly all over the world, but never go very far north. Its food consists of insects, which it hunts at twilight. It belongs to the same family as the whippoorwill, and in some localities is known as the churn-owl.

Gray Partridge—The common gray partridge is one of the finest of game birds. The chestnut horseshoe mark on the breast is the most conspicuous part of its plumage. In other respects it harmonizes with its surroundings of gray and brown. It is too well-known to need any extended description.

Red Partridge—In this handsome bird the upper parts are brown shading into chestnut. The chin and throat are white, as is the eye stripe. When pursued they try to escape by running. The home of the red partridge is in Southwestern Europe.

Magpie—The plumage of the common magpie is black and white, and its form and habits are those of a crow. They are extremely active and noisy. Like the jackdaw they are not particular about the location of their nest. The eggs number from five to seven, are bluish-white, with greenish-brown spots. In Europe, magpies fall prey to sportsmen who hunt them with falcons.

Golden Oriole—Every spring the golden oriole leaves his home in India and pays a visit to northern Europe. Until the beech tree is in leaf it has some difficulty in concealing its brilliant plumage among the bare twigs. The male is a rich golden-yellow above, the wings being black, broadly edged with yellow; the tail is black, tipped with yellow, while the entire under surface is golden yellow. The back of the female is tinged with green. The enemy of the golden oriole is the sparrow hawk. In Europe this bird is usually silent, but in India it constantly pours out a flute-like note.





LIBRARY OF CONGRESS



0 002 892 912 2

